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ANNUAL REPORT

OF THE

SURGEON GENERAL,

FOR THE YEAR 1864.

MADE TO THE

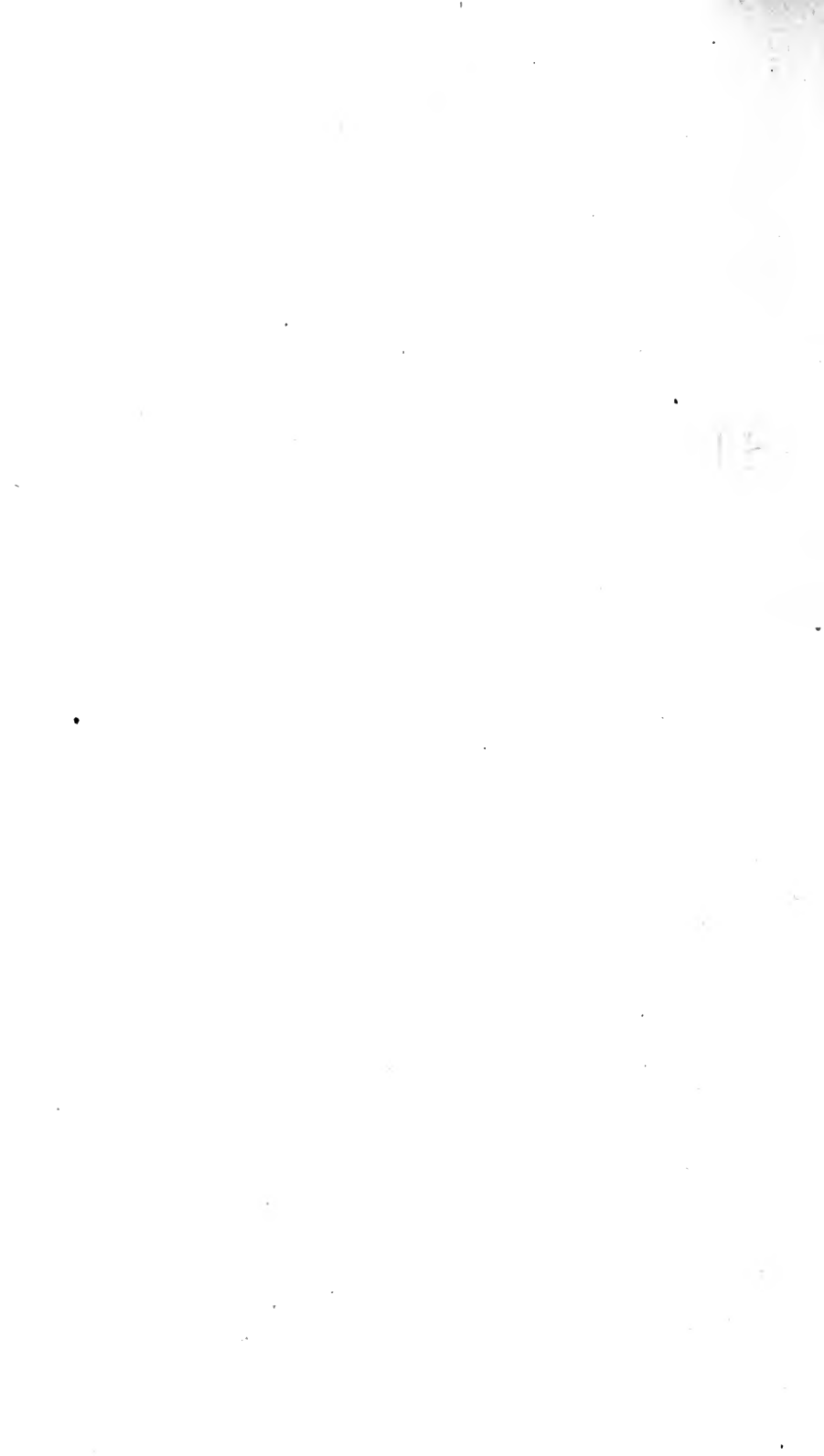
GOVERNOR OF THE STATE OF OHIO.

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1865.



SURGEON GENERAL'S REPORT.

SURGEON GENERAL'S OFFICE,
Columbus, Nov. 15, 1864.

To his Excellency, John Brough, Governor of Ohio :

SIR:—I have the honor to herewith transmit a brief summary of the most important subjects connected with the Medical Department of the State, for the year just closed, under the following heads :

1. Examinations of Medical Officers.
2. Appointments of Medical Officers.
3. Resignations and Deaths.
4. Names and rank of Medical Officers in service previous to the time covered by this Report.
5. Promotions.
6. National Guard.
7. Miscellaneous.

I entered upon the duties of this department on the 13th day of January, 1864. My first aim was to ascertain the wants of the service pertaining to the Medical Department, and, so far as practicable, have them at once supplied. To fill up vacancies in regiments, occasioned by the unavoidable casualties of war, a Medical Examining Board was constituted and at once convened for the examination of applicants.

The exigencies of the service required so many medical officers that the meetings of this Board have been several times repeated during the year. At their different sessions, applicants to the number of 287 have presented themselves for examination. One hundred and seventeen of them were successful, all of whom have been commissioned and sent to the field. In addition to this drain upon the medical profession of the State, occurring, as it has, each year during the continuance of this war, this department has furnished 95 Acting Assistant Surgeons for hospital and field service, through Dr. Chas. S. Tripler, Surgeon U. S. A. and Medical Director of the Northern Department, on Gen. Joseph Hooker's staff.

The State Board of Medical Examiners consist of the following named gentlemen: President, John W. Russell, M.D. of Mount Vernon; Secre-

retary, Gustav C. E. Weber, M.D. of Cleveland; and John A. Murphy, M.D. of Cincinnati. It is proper to remark that these gentlemen discharged their delicate and responsible duties with the most conscientious fidelity, and have recommended only those for appointment of whose qualifications, both morally and professionally, they felt fully satisfied. I might remark, in passing, that, during the absence of Prof. Weber in Europe, and the illness of Dr. John A. Murphy, Drs. S. M. Smith and Starling Loving were temporarily appointed on the Board, and were kind enough to serve during the interregnum.

A long period of personal service in the field, demonstrated clearly to me that the good of the service, and justice to Assistant Surgeons who had served acceptably one, two and three years, required that all vacancies occurring in old regiments of the rank of Major-Surgeon should be filled from among this class of officers, and, so far as practicable, their promotion be governed by seniority of rank. The same practice was adopted with regard to the new regiments lately sent to the field, and, as a general thing, rigidly adhered to. In the adoption of this course, I have been most fully endorsed by the entire army, from general officers to privates in the ranks, as numerous letters on file in this office will show.

The army, in the early history of this rebellion, grew so rapidly into tremendous proportions—unprecedented in modern times—that it imposed upon the National Medical Department responsibilities and labors which it had not the organization and capacity to supply. To meet these great wants, the States promptly proffered their co-operation. The records of Ohio, during these earlier years of the war, bear ample testimony to the generous part she took in that work. The volunteer services of medical men, and others, as nurses, together with contributions by the State, and by citizens, were of incalculable value. Much is still being done in the same way, but the appointment of State Agents in the different States and cities, and the operations of the Christian and Sanitary Commissions has so systematized means of relief to the soldiers in the field, that it has rendered almost unnecessary the personal service heretofore so liberally extended. The vastly more liberal organization of the National Medical Staff; the largely increased and better arranged hospital facilities, and the increased number of medical officers allowed by law to regimental organizations, has tended greatly to diminish the necessity of volunteer medical and surgical aid. Soldiers, disabled for field duty, but well trained to the business of hospital attendants, have, to a large extent, supplied the places of citizen and volunteer nurses. These men, though brave, and oftentimes uncouth in appearance, are yet as kind and tender as women to their sick and wounded comrades, and know exactly a soldiers' wants.

Notwithstanding the increased strength of the Medical Staff, the en-

larged hospital facilities, and the improved general health of the army during the past year, (and no great armies in the history of the world have been so signally exempt from malignant epidemics as has ours,) yet, because of the severity of the campaigns, the number of wounded and those who have fallen sick on the march, and in the bivouac, have been greater than could be promptly and efficiently cared for, without largely increased medical and surgical aid. This additional help has been constantly and promptly provided, but mainly in a different manner from the volunteer system heretofore pursued, and which, in its time, worked well.

As the seat of war has been farther and farther removed from our homes and borders, necessarily increasing the dangers of travel on the navigable rivers and railways leading thereto, so much precious time must necessarily be consumed, and so much expense incurred, and frequently the almost impossibility of transporting civil surgeons to the point where their services would be most available; and, most of all, because of their inexperience in just the kind of duties required, the treatment of gunshot wounds and diseases peculiar to camps and armies, that it became evident that some other and better plan should be adopted. I therefore, shortly after entering upon the duties of this office, made arrangements with the United States' medical authorities for giving them a constant supply of additional medical and surgical aid, in the form of contract, or Acting Assistant Surgeons, U. S. A. It was arranged with the Medical Director in charge of this and other departments that, on requisition being made on my department for contract Surgeons, they should be at once furnished, compensation and transportation being provided by the Federal Government. This class of officers are required to produce evidence of having graduated at some regular medical school; evidence of moral character and standing, and to test their professional skill by examination before a Board in the same manner as candidates for appointment as Assistant Surgeons in our own Ohio regiments. After contract, they are required to observe all the regulations, the same as the regularly commissioned officer, and are clothed with proper authority to enforce good order and discipline in their commands. In this manner I have been enabled, so far, to supply a constant, sufficient and efficient medical corps for the daily increasing wants of at least the western and southwestern wings of our vast army. Up to this date there have been furnished from this office one hundred and twenty-three of this class of medical aid, the majority of whom are still in the service, although their first contracts did not cover over three months' time.

I am happy to state that among the medical staff of Ohio there have been, during the year, but *three* dishonorable discharges from the service, two of whom, on proper hearing, have been re-instated, and that from all

the armies and fields of service there have come up to this department the highest praise and encomiums of Ohio Surgeons and Assistant Surgeons. That they fully merit this distinction is evidenced by the highly responsible positions Ohio medical men occupy in the different departments of the army.

During the Morgan raid in our State, in the summer of 1863, your predecessor, Gov. David Tod, by a proclamation, called out a large militia force to assist in capturing the intruders or repelling them from our borders. Medical officers, Surgeons and Assistant Surgeons, were appointed for this force, as provided for by the then existing militia law. These officers purchased the necessary medical supplies on the faith of the State, from dealers in drugs and medicines doing business at points nearest to the camps that were held in different parts of the State. No appropriation having as yet been made by the Legislature for the payment of the salaries of these officers, or for the bills thus necessarily made in the purchase of material with which to succor the sick, I respectfully beg leave to call the attention of the Legislature, through your Excellency, to the necessity of making an appropriation sufficient to liquidate this just indebtedness. The bills and vouchers are on file in this Department, amounting in all to about two thousand dollars. The medical officers appointed to these militia regiments were faithful in the discharge of their duties, and the purchases of medical supplies were made at reasonable and just prices.

Examinations of medical officers who present themselves as candidates for appointment to the medical staffs of Ohio regiments in the field, are required by law to be strictly made by the State Board of Medical Examiners appointed by the Governor for that purpose. The present Board, whose names I have mentioned above, are gentlemen of acknowledged ability and high professional standing. I have before alluded to their faithful discharge of duty, and the high standard of qualification adopted in the beginning of the war has not been lowered by the present Board. The creation of this Board by legislative enactment was an act of wisdom, and has resulted in great good to the service, aside from the selection of men fitted for the positions of Surgeons and Assistant Surgeons in the army. It has inspired a spirit of activity, study, and emulation in the profession throughout the entire State.

There have been three regular meetings of the Board during the year, to examine applicants for the old and new regiments, and also one for the National Guard, to which I will hereafter refer. The first session was held at the Starling Medical College, in Columbus, on the 15th day of March last, at which thirty-three applicants were successful, and were recommended by the Board for appointment to the position of Assistant Surgeons in the army. The second meeting was held at the Ohio White

Sulphur Springs, when seven gentlemen passed a successful examination, and were duly recommended as Assistant Surgeons. The third session was held in the State House on the 26th day of September, at which thirty-six gentlemen received recommendations. In addition to these regular sessions, thirty-six candidates have been successfully examined during the year by different members of the Board, at their places of residence, as the exigencies of the service demanded.

By reference to tabular statement marked A, it will be seen that one hundred and thirty appointments have been made during the year. The number of appointments, it will be seen, is greater than the number passed by the Board. This is accounted for by the fact that many of those who had previously resigned on account of impaired health have, on their recovery, returned to the good work of ministering to the medical wants of the soldier in the field. These appointments are distributed through almost the entire list of regiments on our State roll. The necessity for so large a number is accounted for by the number of new organizations, transfers to Surgeons and Assistant Surgeons of Volunteers, resignations and deaths.

The number of promotions have been sixty-nine. For names of officers and regiments in which promotions have been made, see table marked E. By reference to table marked B, it will be seen that there have been forty-four resignations. Table C shows the number of officers mustered out by term of service. Table D shows the number of regiments and men mustered out of the National Guard at the expiration of their term of service. This table will be valuable as a reference hereafter.

A very large majority of those resigning were compelled to do so by reason of failing health, in many instances never to be regained; and in some instances, soon after retiring from the service, death has overtaken them, and sealed their unselfish patriotism. The number of dismissals for incompetent and unfaithful discharge of duty has been gratifyingly few.

The number of deaths occurring in the service during the year (as see table marked F) have been fifteen—seven Surgeons and eight Assistant Surgeons. One of the Major Surgeons died on the battle-field, slain by the deadly missile of the enemy while in the discharge of his duty, on one of those fields in the Shenandoah Valley made sacred and glorious by the brave Sheridan and the equally brave officers and men under him. The others fell at their posts; remaining there until stricken down by disease, they yielded up life in the field of their labors. None of these martyrs to science and their country were permitted to see their homes or loved ones. Some of them were young men, full of cherished hopes, and in whom were centered large expectations of long and useful lives—others were full of years and honors. Let a grateful people

forever cherish their memories, and let their medical brethren of Ohio erect in her capitol a tablet in their honor, that shall endure so long as the Government itself, in whose service they gave all their cherished hopes, their labors, and their lives. This record, however, presents but a portion of those who have thus sacrificed their lives for their country. Many of those who have resigned because of failing health, after a few weeks or months of suffering, have passed away forever from earth. Others, still, hailing from Ohio, but belonging to that branch of service known as Surgeons of Volunteers, have died during the year. Their names also should, in justice, be added, as a part of the great sacrifice laid by our State upon the costly altar of our common country.

THE NATIONAL GUARD.

The organization of the arms-bearing portion of the population of the State, under the recent new military law, and known by the honored title of National Guard, has created in our State a reserve corps of from forty to fifty thousand men, and has thrown new and novel duties upon this office. The organization of the different regiments and battalions had not been effected when, by your proclamation of May, this reserve corps was called by the great emergencies of the hour to share the labors, dangers and honors of the tented-field for the space of one hundred days. Not a single medical officer had been commissioned. My books were empty of passed Assistant Surgeons. There was not, nor is there yet, a State Medical Purveyor or purveying establishment, both of which are indispensably necessary to perfect the medical department of the State military forces, and should be provided for by law.

Section 17 of the act to organize the militia of Ohio, provides that Surgeons and Assistant Surgeons shall be appointed by the commanding officers of regiments, &c., and section 84 of the same law provides that the Governor shall appoint a Medical Board, and that no person shall be appointed Surgeon or Assistant Surgeon unless he shall have been examined and recommended by said Board. Here is at least a seeming conflict of terms in the law that gave me some embarrassment. On consultation with the Adjutant-General, I immediately issued a circular to the commanding officers of regiments and battalions to make their appointments in the way of nominations, and to cite them to appear before the Board for examination on the 3d day of May, which was summoned to convene at that time in the capital for this special purpose. I also issued an appeal to the medical profession of the State to attend in large numbers, and thus put themselves in the way of accepting these positions of honor and trust. A few of the commanding officers only made appointments; the majority neglected to do it, or notifying this Department that they felt a delicacy, from want of knowledge of the required qualifications to

be desired in medical officers, and requesting me to select their medical staff for them. This Department is in possession of all the data required to enable it to select good and faithful medical men for the service, and all appointments for that branch should emanate from it.

At the above named meeting of the Board there were examined seventy-seven gentlemen, sixty-nine of whom were successful, and received appointments in the National Guard. This number not being sufficient for the regiments organized, the deficiency was made good by private examinations, and by drawing from our files the names of those who had seen service, and were recruiting their health at home. On being notified, these gentlemen patriotically consented to re-enter the service for the term of one hundred days. The Major Surgeons were all selected from veterans who had seen one, two and three years' service, and who were fully versed in the requirements of field service. The thanks of the State and of the country are due to these gentlemen for their self-sacrificing patriotism.

I was thus enabled to provide each of the commands with a Surgeon, and most of them with two Assistants. Forty-two regiments were organized, and in two weeks' time from the day specified in the call for them to report in camp, they were all supplied with medical officers, who, during this short space of time, had arranged their domestic affairs, presented themselves before the Board for examination, passed in a highly creditable manner, were commissioned, and reported to their respective commanding officers for duty.

I had, in the meantime, made application to the Secretary of War to have these regiments supplied with all necessary medical and hospital stores for the one hundred days, which was promptly granted, and orders issued accordingly to the Medical Purveyors to have the supplies ready, and to fill the requisitions promptly when made. All of which was attended to with promptness and dispatch by these gentlemen. I am much indebted to Surgeon Charles S. Tripler, of the regular army, Medical Director of the Northern Department, for his kindness in furnishing many necessary forms for requisitions, and affording me all the assistance in his power to perfect and facilitate all the required operations.

REPORTS.

I had blank forms prepared for making monthly and quarterly reports of casualties to this Department. A supply of these was handed to each Surgeon of the National Guard. By most of them the reports were promptly made, enabling the Department to be constantly posted as to the sanitary condition of the different regiments, as also their wants and necessities. I had hoped to receive a final consolidated report from each regiment, to enable me to give a correct and full history of all the casual-

ties of the combined Guard, during their whole term of service, but these have not as yet all come to hand, so that it is impossible for me to give the complete tabular statement of casualties I had desired and expected. It is proper to remark, however, that those regiments stationed on and in the vicinity of James River, near Richmond, suffered much sickness, consisting principally of diarrhoea and typho-malarial fever, which, I am pained to add, proved fatal in numerous instances, several of the regiments losing from twenty-five to forty men each. In other regiments of the Guard, stationed in less malarious districts, the sickness was much less, and the mortality very light. Excepting those killed in battle, the mortality was perhaps not greater than among a corresponding population at home, in civil life. In fact, the mortality was so small as to be the cause of congratulation and wonder; and especially so when we consider that, as a rule, in an army of volunteers, selected with little care as to soundness of body and physical fitness for field service, that within the first six months from one-half to two-thirds of the whole number pass through the hospitals.

At the time the National Guard was ordered home and relieved from duty, many members of the different regiments stationed on the James River were left sick in hospitals, and unable to return with their more fortunate comrades. Their commanding officers had not the means of transportation suitable for sick men. To leave them there, in overcrowded hospitals, at the most unhealthy season of the year, and in the most unhealthy climate on this continent, was to leave them to an uncertain fate—nay, to an almost certain fate, that of death. Every sense of duty and humanity, therefore, prompted me to have these men removed to better and more healthy locations as speedily as possible. To effect this desirable object, I dispatched the Surgeon-General of the army, stating that there were several hundred of the Ohio National Guard whose time had expired, or was about to expire, sick in hospitals at Fortress Monroe and other points in that vicinity, and requested him to have commodious hospital steamers sent down and have them promptly brought up to Washington, New York and Philadelphia hospitals, where their chances for recovery would be more certain and speedy, and from whence they could be discharged as speedily as their recovery would permit. To this request the Surgeon-General at once acceded, and promptly acted accordingly. By this measure I have no doubt much suffering was spared to these brave men, as also much painful anxiety to their friends at home, and that many valuable lives was thereby saved.

For the number of the National Guard mustered into the U. S. service, see table D, and for the number mustered out, so far as reported, see tabular statement marked E. For this last mentioned statement I am indebted to Capt. J. A. Grover, the efficient A. A. G. and Superintendent of the recruiting service at this point.

Before closing this part of my report, I desire, through your Excellency, to call the special attention of the Legislature to section six of the militia law, which treats of exemptions from military duty by reason of physical disability. Clause fifth of said section provides as follows: "Every person physically disabled may be exempted from military duty if he files with the County Auditor, on or before August 15th of every year, a statement of a reputable physician or surgeon, certifying that such person is unfit for military duty by reason of such physical disability or bodily infirmity, which shall be described in said statement. This statement should be verified by the affidavit of said physician or surgeon. If any person shall knowingly or wilfully make a false affidavit in this matter, he shall be deemed guilty of perjury."

I would respectfully suggest that this clause be so modified as to provide for the appointment of a medical officer in each county of the State, to hold his office for the same period as other State officers, and appointed in the same manner as other military medical officers; and whose duty it shall be to examine persons held under the law for military duty, claiming exemptions for physical disability: and that such physician shall be the only person qualified to give certificates of exemption—these certificates to be filed, as now, with the County Auditor. They should be explicit as to the nature of the disability, and governed by the rules exempting from military duty in the U. S. army. I would also respectfully suggest that the law be so amended as to require the several County Auditors to forward copies of all such exemptions to this Department by a certain date of each year. The examining physician to be paid a certain sum for each party examined, such compensation to come from the party claiming exemption. This fee should not be so large as to be oppressive to the poor—not less than \$1 nor more than \$3.

MISCELLANEOUS.

In the beginning of this war, or, at least, for the first two years, it was the policy of the State authorities, on the eve, or just after a great battle, to dispatch to the field a corps of surgeons and nurses for the humane purpose of succoring her wounded and dying soldiers. Much and valuable aid was thus rendered to the soldier, as well as to the Medical Staff, who, at that day, were few in number and sorely taxed with labor in caring for their then large regiments. Hospital boats, too, were dispatched by the navigable water-courses, where it was possible to reach the vicinity of the field, and thousands of Ohio soldiers were brought home, to be cared for by their friends and relatives. Many thousands of dollars were thus disbursed in this humane and patriotic way. I am proud to say that I was frequently honored by your predecessor, Hon. David Tod, with the superintendence of the medical departments of these boats, and can bear

personal witness of the vast and incalculable good they were the means of effecting. The increased facilities of the General Government in its medical and transportation departments, and the large addition to the medical staff, has rendered unnecessary for the past year the continuance of State munificence in the way of surgeons, nurses, or hospital boats. For that reason, therefore, such expeditions have been almost wholly discontinued by the State authorities.

There has been but one expedition of the kind projected by this department during the past year. Just after one of General Sherman's first battles, during his onward march to Atlanta, a party was dispatched *en route* to Nashville and Chattanooga, for the purpose of attending to the wants of Ohio soldiers who had been wounded, or were worn out by the excessive fatigues of the campaign. This party consisted of six surgeons and as many nurses, which, by your orders, I placed under the superintendence of my assistant, Capt. W. R. Looker, who had for his aids Rev. Mr. Morris, of this city, and J. H. Klippart, Esq., of the Agricultural Bureau. On arriving at Louisville, Ky., however, and on consultation with your State Agent at that point, Capt. Vesalius Horr, it was decided that—the General Government and the different benevolent Commissions having effected every thing in the way of succor to the soldiers that was necessary or possible—the services of the party were not needed at the front, and they accordingly returned to Columbus; not, however, without leaving funds in the hands of the State Agent for the purpose of relieving any possible want that might arise, on the arrival of wounded and sick Ohio soldiers at Nashville or Louisville. Since that time no other emergency has arisen for expeditions of this nature.

In speaking of former visits to the battle-fields, I cannot abstain from mentioning the many official courtesies received from the Surgeon-General of the army, the Secretary of War, his Assistants, and others connected with the army. In my official intercourse, also, during the time I have had the honor to preside over this department, the most pleasant courtesies and assistance have been accorded by the above-named officers. To the Assistant Surgeon-General, Col. R. C. Wood, headquarters at Louisville, Ky., and to the Medical Director of the Northern Department, Surgeon Charles S. Tripler, U. S. Army, and his assistant, Surgeon David Stanton, I am indebted for assistance and gentlemanly courtesies.

The room appropriated for this office is poorly ventilated and lighted, and entirely too small and inadequately furnished with the necessary cases and shelving for filing and preserving the books, papers and data pertaining to the department. I therefore beg leave to call the attention of the Legislature to the fact, and respectfully ask that a more commodious and better furnished apartment be allotted.

Hitherto no appropriation has been made by law for defraying the nec-

essary expenses of the department, except the salary of the Surgeon-General, which is much too small, in comparison with the duties of the office, and entirely inadequate to the support of a family at the present prices of every thing connected with the wants and necessities of life. I most respectfully, therefore, ask for an increase of salary. In other States, where such offices exist, and in the Federal Government, the Surgeon-General has the same rank and emoluments as the heads of the Adjutant-General and Quartermaster's Bureaus. I also ask that appropriation be made by law for all the expenses of the office, viz.: the salary of the Surgeon-General, for clerical force, stationery, postal and telegraphic expenses, janitor, &c. Specifications will be made to the Chairman of the Committee on Finance at the proper time.

The duties of the head of this department, though never specified by law or General Order, are very general in their character, and have, by the long continuance of the war and the organization of the State military forces, become of very considerable magnitude. Beside the keeping on hand a constant supply of medical men to fill up the constantly occurring vacancies of regiments in the field and the National Guard, and the necessary correspondence with Medical Directors of Departments, Divisions, Surgeons and Assistant Surgeons of regiments, there is a large correspondence with the friends of the soldiers, especially of those sick or wounded and in hospitals. Large numbers of letters are daily received, making inquiry for sons in the army, soliciting furloughs, transfers, and almost every thing pertaining to their wants. There are also constant streams of disabled soldiers visiting the office for information in regard to the steps to be taken to procure pensions, discharges, extensions of furloughs, &c. All this requires much time and patience, but I have never suffered a letter to go unanswered over night, or turned away a soldier or his friend without giving the required aid or information. In addition to these duties, all certificates of disability, for the discharge of those belonging to the organized militia, are or should be referred to this department, for examination and approval, before a final discharge is granted by the Adjutant-General.

In all the duties of the office I have been greatly aided by Capt. W. R. Looker, my assistant, whose promptness, fidelity, and perfect familiarity with the Army Regulations, General Orders, and by his long connection with the office, has rendered his services invaluable both to me and to the State. It affords me pleasure to make this public acknowledgment of the services of a long and well-tried officer.

Governor Tod, with the magnanimity which characterized all his official acts, and with a view to the welfare of the soldier, appointed during his administration Prof. J. H. Salisbury to visit the camps and hospitals of the Western armies, to investigate the prevailing army diseases and epidem-

ics, and their causes. Dr. Salisbury prosecuted his researches with great energy and perseverance, oftentimes under very great difficulties and at considerable personal sacrifice. He met with highly satisfactory results—results which, if published, would not only benefit and interest every medical man, but the public at large. A few extracts from his uncompleted manuscripts were inserted in last year's report of my distinguished predecessor, Samuel M. Smith, M.D., with the recommendation that the whole of Dr. Salisbury's paper be published by the State. This has not been done; and because of the great merit of the paper and its practical utility, especially to Army Surgeons, and those contemplating an entrance into the service, I herewith submit a part of it, with the recommendation that it be appended to my Report.

All of which is respectfully submitted.

Very respectfully,

Your ob't serv't,

R. N. BARR,
Surgeon-General of Ohio.

Appointments of Medical Officers during 1864.

Date of Appointm't.	Name.	Residence.	Rank.	Regim't.
February 22	J. Cullen Barr	Madison county...	Surgeon	1
April 22	A. J. Brackett	Bristolville	Asst. Surgeon	1
January 18	M. D. Wilson	Belle Centre	Asst. Surgeon	4
May 19	Barsilai Gray	Houston	Asst. Surgeon	4
August 25	A. E. Jenner	Crestline	Surgeon	5
November 7	J. G. Junkin	Wyandotte	Asst. Surgeon	5
October 14	W. M. Clark	Mt. Vernon	Surgeon	15
July 13	John W. Vandervoort	Delaware	Asst. Surgeon	16
October 3	H. B. Fricker	Jefferson	Surgeon	20
April 23	James McClure	Albany	Asst. Surgeon	23
July 30	Wm. Walton	Woodfield	Surgeon	25
July 30	E. M. Wilson	Belle Centre	Asst. Surgeon	25
Sept. 26	David Rush	Celina	Surgeon	26
Sept. 28	F. W. Inman	Middleburg	Asst. Surgeon	26
October 3	James G. Carr	Millersburg	Asst. Surgeon	26
November 1	Isaac Young	Alliance	Surgeon	27
August 29	Edward P. Haines	Spring Valley	Surgeon	29
August 24	Thomas B. Miser	Martinsburg	Asst. Surgeon	29
October 3	Elias S. Chapel	New Lyme	Surgeon	31
Sept. 21	Thomas P. Bond	Mechanicsville	Surgeon	32
Sept. 7	A. J. Patterson	Adelphi	Asst. Surgeon	32
Sept. 20	Wm. H. Putt	Buena Vista	Asst. Surgeon	32
October 15	John A. Soliday	Pickerington	Asst. Surgeon	32
January 4	Wm. T. Ropp	Delaware	Asst. Surgeon	33
October 3	Lyonel J. Smith	Hamilton	Surgeon	33
June 8	J. P. Schilling	Louisville	Asst. Surgeon	34
October 3	Charles O. Wright	Cincinnati	Surgeon	35
April 28	Frederick Hohly	Cleveland	Surgeon	107
August 27	C. E. Tupper	Ottawa	Asst. Surgeon	41
January 6	H. McFadden	Stanton	Asst. Surgeon	42
April 6	Charles E. Poe	Ravenna	Asst. Surgeon	43
November 1	M. J. Bowland	Columbus	Surgeon	8th Cav.
Sept. 19	D. P. Smedley	Carthage	Surgeon	46
August 19	Samuel H. Spencer	Bazetta	Asst. Surgeon	49
Sept. 24	W. H. Park	Tiffin	Surgeon	49
June 25	E. D. W. C. Wing	Mt. Vernon	Surgeon	51
May 19	S. A. Simpson	Vienna	Asst. Surgeon	52
February 24	Joseph Hebble	Johnsville	Asst. Surgeon	55
November 1	Joseph Hebble	Johnsville	Surgeon	55
February 27	John A. Saylor	Columbus	Asst. Surgeon	62
July 25	Moses H. Quinn	Wilmington	Asst. Surgeon	64
July 25	Hugh P. Anderson .....	.....	Surgeon	64
July 13	C. J. Hagan	Port Washington	Asst. Surgeon	65
October 10	J. A. Dickson	Nashville	Asst. Surgeon	65
July 13	L. B. Voorhes	Mt. Gilead	Asst. Surgeon	68
October 25	E. C. De Forrest	Troy	Asst. Surgeon	68
August 25	John A. Jaume	Cincinnati	Asst. Surgeon	75
August 10	Andrew Wall	Cambridge	Surgeon	79
September 8	M. Valentine	Etna, Licking Co.	Asst. Surgeon	77
May 25	George F. Peckham .....	.....	Asst. Surgeon	78
April 27	C. W. Myers	Tiffin, Seneca Co. .....	.....	.....
April 27	W. B. Hedges	McConnelsville .....	.....	.....
August 21	George Cassidy	Cleves	Surgeon	83
August 13	A. M. Beers	Newcomerstown	Asst. Surgeon	92
Sept. 19	James M. Weaver	Old Hickory	Surgeon	93
January 6	Edwin Booth	Crestline	Asst. Surgeon	94
April 7	D. W. Humphreville	Piqua	Asst. Surgeon	94
June 5	Charles F. Wilbur	Columbus	Surgeon	95
June 27	Wm. S. Gaines	Cincinnati	Asst. Surgeon	95
May 10	W. A. McCracken	Cambridge	Surgeon	98
May 10	Charles P. Simon	Cambridge	Asst. Surgeon	98

Appointments of Medical Officers—Continued.

Date of Appointm't.	Name.	Residence.	Rank.	Regim't.
May	10 George Sadler	Streetsboro'	Asst. Surgeon	99
August	1 D. H. Brinkerhoff	Willoughby	Surgeon	103
August	9 F. M. Andrews	Dayton	Asst. Surgeon	103
February	1 John Knaus	Cincinnati	Surgeon	107
March	1 Franz Schill	Cleveland	Asst. Surgeon	107
Sept.	28 J. C. Myers	Mexico	Asst. Surgeon	108
April	1 A. W. Pinkerton	Lockington	Asst. Surgeon	110
July	13 W. H. Park	Tiffin	Asst. Surgeon	110
Sept.	5 E. P. Ebersole	Lewisburg	Asst. Surgeon	110
July	10 John W. Mock	Greenville	Asst. Surgeon	111
July	15 A. M. Beers	Newcomerstown	Asst. Surgeon	115
August	8 S. D. Richards	Orrville	Asst. Surgeon	115
Sept.	19 J. W. Reed	Circleville	Asst. Surgeon	115
April	27 John E. Patterson	Cincinnati	Asst. Surgeon	118
June	3 W. Morrow Beach	Lafayette	Surgeon	118
February	23 John C. Gill	Cleveland	Asst. Surgeon	120
April	1 George A. Haise	Florence	Asst. Surgeon	121
March	22 N. B. Brishbine	Upper Sandusky	Asst. Surgeon	123
June	25 Joshua Worley .....	.....	Asst. Surgeon	126
August	1 Ithamar B. Weed	Downington	Surgeon	126
October	1 N. S. Richardson	Lebanon	Surgeon	60
April	20 John M. Evans	Bealsville	Asst. Surgeon	60
January	5 T. Woodbridge	Youngstown	Surgeon	128
January	5 Wm. Tripp	Steubenville	Asst. Surgeon	128
January	5 Porter Yates	Green Springs	Asst. Surgeon	128
October	4 E. V. Kendig	Hayesville	Asst. Surgeon	2d O. H. A.
November	14 John Morgan	Marietta	Asst. Surgeon	2d O. H. A.
March	30 W. B. Boyd	Galena	Asst. Surgeon	3d Cav.
March	31 W. W. Bickett	Columbus	Asst. Surgeon	3d Cav.
March	1 O. G. Field	London	Asst. Surgeon	4th Cav.
October	24 O. G. Field	London	Surgeon	4th Cav.
October	20 D. V. Rannels	Athens	Surgeon	5th Cav.
January	19 Joseph Hebble	Johnsville	Asst. Surgeon	6th Cav.
April	7 A. D. Rockwell	Milan	Asst. Surgeon	6th Cav.
April	23 Charles H. Pinney	Cleveland	Asst. Surgeon	9th Cav.
March	5 James F. Gardner	Navarre	Asst. Surgeon	10th Cav.
October	19 Robert C. Downey	Sarahsville	Asst. Surgeon	13th Cav.
October	19 N. S. Richardson	Lebanon	Surgeon	13th Cav.
Sept.	19 J. C. Marr	Colebrook	Surgeon	173
Sept.	19 Joseph Morris	Columbus Grove	Asst. Surgeon	173
April	19 George Wyman	Hamileon	Asst. Surgeon	173
Sept.	19 F. W. Morrison .....	.....	Surgeon	174
Sept.	15 Martin Doty	Kingston Centre	Asst. Surgeon	174
Sept.	19 Mitchell Starr	Shenandoah	Asst. Surgeon	174
Sept.	20 Rufus A. Dwyer	New Petersburg	Surgeon	175
Sept.	20 D. B. Granger	Russel's Station	Asst. Surgeon	175
Sept.	20 W. F. Hani	Dundee	Asst. Surgeon	175
Sept.	20 W. A. Brown	McConnellsville	Surgeon	176
Sept.	20 Wm. Reed	Iberia	Asst. Surgeon	176
Sept.	19 S. S. Burrowes	Geneva	Surgeon	177
Sept.	19 W. A. Bivans	New Hope	Asst. Surgeon	177
Sept.	19 Richard Edwards	Quincy	Asst. Surgeon	177
Sept.	26 J. Campbell	Wellington	Surgeon	178
Sept.	26 Robert Taylor	Plympton	Asst. Surgeon	178
Sept.	26 Edwin Booth	Crestline	Asst. Surgeon	178
Sept.	26 W. H. Wilson	Cincinnati	Surgeon	179
Sept.	26 M. H. Logue	North Washington	Asst. Surgeon	179
October	3 F. W. Inman	Middleburg	Asst. Surgeon	179
October	21 Frank E. Powers	Prospect	Surgeon	180
October	10 James N. Bolard	Conneautsville	Asst. Surgeon	180
October	11 Calvin D. Case	Lewis Centre	Asst. Surgeon	180

Appointments of Medical Officers—Continued.

Date of Appointm't.	Name.	Residence.	Rank.	Regim'nt.
October 20	Sol. Wolff	Cincinnati	Surgeon	181
October 30	Oliver C. McCarty	Polk	Asst. Surgeon...	181
October 20	Martin Valentine	Etna	Surgeon	182
October 20	Abraham H. Iler	Blue Ball	Asst. Surgeon...	182
October 20	Peter Willett	Genoa	Asst. Surgeon...	182
November 12	Cyrus Hosack	Fredericktown ...	Surgeon	183
November 10	F. C. Plunkett	Cincinnati	Asst. Surgeon...	183
November 12	Edward F. Baker	Cleveland	Asst. Surgeon...	183

2—SURG.-GEN.

B.

Resignations for the year 1864.

Regiment.	Name.	Rank.	Date of Res-ignation
5th Infantry.....	William F. Tibbals	Assistant Surgeon..	September 6.
8th "	Freeman A. Tuttle	Assistant Surgeon..	March 5.
10th "	Joseph H. Vandeman	Assistant Surgeon..	May 10.
15th "	H. A. Sayres	Surgeon	Sept. 8.
15th "	William J. Kelley	Surgeon	Oct. 10.
19th "	Robert McNielly	Assistant Surgeon..	Aug. 22.
26th "	W. B. McGarran	Surgeon	Sept. 8.
27th "	James Sprague	Assistant Surgeon..	May 25.
29th "	A. K. Piffeld	Surgeon	Aug. 12.
29th "	L. Holland	Assistant Surgeon..	
32d "	A. H. Brundage	Surgeon	Aug. 31.
33d "	David Welsh	Surgeon	Sept. 21.
36th "	James P. Welsh	Assistant Surgeon..	Sept. 18.
37th "	A. W. Billhardt	Assistant Surgeon..	Oct. 13.
43d "	William S. Bell	Assistant Surgeon..	March 29.
43d "	Coridon Morrow	Assistant Surgeon..	March 29.
53d "	William W. Cake	Surgeon	Sept. 20.
57th "	Jacob W. Knouff	Assistant Surgeon..	April 5.
79th "	Fred. Jaeger	Assistant Surgeon..	Jan. 29.
73d "	William Richeson	Assistant Surgeon..	June 27.
75th "	D. B. Wren	Assistant Surgeon..	July 26.
77th "	James W. Warfield	Surgeon	Aug. 1.
92d "	N. B. Sisson	Assistant Surgeon..	Aug. 15.
93d "	George P. Ashmun	Surgeon	Aug. 22.
95th "	H. F. Gill	Surgeon	May 22.
95th "	E. P. Hooven	Assistant Surgeon..	
103d "	R. S. Stansbury	Assistant Surgeon..	
103d "	L. D. Griswold	Surgeon	
106th "	Adolph F. Schroen	Surgeon	
110th "	T. C. Owen	Assistant Surgeon..	April 20.
110th "	A. W. Pinkerton	Assistant Surgeon..	
115th "	A. J. Patterson	Assistant Surgeon..	
116th "	James L. Brown	Assistant Surgeon..	
118th "	Wm. H. Phillips	Surgeon	May 7.
118th "	W. B. Shaeffer	Assistant Surgeon..	Feb. 3.
120th "	C. C. Stofer	Assistant Surgeon..	
123d "	J. H. Williams	Assistant Surgeon..	Jan. 25.
126th "	W. Estep	Surgeon	Feb. 5.
1st O. H. Artillery.	E. G. Hard	Assistant Surgeon..	Aug 23
1st O. V. Cavalry.	Wilson V. Cowan	Surgeon	July 20.
5th O. V. Cavalry.	George Sprague	Assistant Surgeon..	
14th Infantry.....	George E. Sloat	Surgeon	Nov. 8.
41st "	Albert G. Hart	Surgeon	Nov. 10.
27th "	Jacob C. Denise	Surgeon	Nov. 17.

C.

Mustered out by Expiration Term of Service.

Name.	Regiment.	Rank.
J. Cullen Barr	1st Infantry.....	Surgeon.
Andrew J. Brockett	1st "	Assistant Surgeon.
B. F. Miller	2d "	Surgeon.
W. A. Carmichael	2d "	Assistant Surgeon.
William L. Peck	3d "	Surgeon.
Wesley H. Race	3d "	Assistant Surgeon.
F. W. Morrison	4th "	Surgeon.
A. Ball	5th "	Surgeon.
A. H. Stevens	6th "	Surgeon.
Israel Bedell	6th "	Assistant Surgeon.
C. J. Bellows	7th "	Surgeon.
John C. Ferguson	7th "	Assistant Surgeon.
J. L. Brenton	8th "	Surgeon.
J. S. Pollock	8th "	Assistant Surgeon.
Conrad Solheim	9th "	Surgeon.
A. M. Beers	9th "	Assistant Surgeon.
Homer C. Shaw	10th "	Surgeon.
John McCurdy	11th "	Surgeon.
N. H. Sidwell	11th "	Assistant Surgeon.
A. B. Hartman	11th "	Assistant Surgeon.
N. F. Graham	12th "	Surgeon.
Horace P. Kay	12th "	Assistant Surgeon.
Silas T. Buck	12th "	Assistant Surgeon.
Allen Jones	13th "	Surgeon.
James McCready	13th "	Assistant Surgeon.
John K. Moore	13th "	Assistant Surgeon.
B. B. Brashear	16th "	Surgeon.
O. Pomeroy	16th "	Assistant Surgeon.
J. W. Vandervoort	16th "	Assistant Surgeon.
William P. Johnston	18th "	Surgeon.
Charles H. French	18th "	Assistant Surgeon.
J. M. Cooke	24th "	Surgeon.
E. M. Howland	24th "	Assistant Surgeon.
Charles E. Denig	28th "	Surgeon.
A. E. Jenner	28th "	Assistant Surgeon.
J. C. Kalb	42d "	Surgeon.
H. McFadden	42d "	Assistant Surgeon.

D.

Number of the "National Guard" mustered into service.

No. of Regim't.	Name of Com'dts.	Name of Surgeon.	Where Mustered.	Strength.	Date of leaving Camp.
130th	Col. C. B. Phillips ..	Samuel T. Thorn..	Johnson's Island.	840	June 6th, 1864.
131st	" John G. Lowe ..	Orson Britton....	Camp Chase	871	May 15th, ..
132d	" Joel Haines	W. J. Sullivan....	Camp Chase	846	" 22d, ..
133d	" G. S. Innis.....	C. P. Landon	Camp Chase	917	" 7th, ..
134th	" J. B. Armstrong..	James F. Spain ..	Camp Chase	867	" 7th, ..
135th	" Andrew Legg ..	M. M. Stimmell...	Camp Chase	850	" 11th, ..
136th	" W. S. Irwin	S. M. Hewitt.....	Camp Chase	869	" 15th, ..
137th	" Len. A. Harris...	W. B. Davis	Camp Dennison...	905	" 12th, ..
138th	" S. S. Fisher.....	C. P. Wilson.....	Camp Dennison...	843	" 16th, ..
139th	Lt.-Col. Loyd Wayne	John Hill	Camp Dennison...	773	" 24th, ..
140th	Col. R. B. Wilson ..	D. C. Rathburn...	Gallipolis	858	" 21st, ..
141st	" A. D. Jaynes	Chas. L. Wilson ..	Gallipolis	866	" 21st, ..
142d	" W. C. Cooper	W. N. King	Camp Chase	845	" 14th, ..
143d	" W. H. Vodray	Sam'l H. Lee	Camp Chase	856	" 15th, ..
144th	" S. H. Hunt	J. L. Mounts.....	Camp Chase	834	" 12th, ..
145th	" H. C. Ashwell	H. Besse	Camp Chase	870	" 13th, ..
146th	" H. Crampton	J. L. Drake.....	Camp Dennison...	882	" 12th, ..
147th	" B. F. Rosson	Horace Coleman ..	Camp Dennison...	853	" 19th, ..
148th	" T. W. Moore.....	Wm. Beebe	Camp Marietta ..	823	" 20th, ..
149th	" Allison L. Brown	W. A. Brown	Camp Dennison...	858	" 11th, ..
150th	" W. H. Hayward..	J. W. Smith	Camp Cleveland ..	929	" 12th, ..
151st	" J. M. C. Marble ..	M. A. Harper	Camp Chase	860	" 14th, ..
152d	" David Putnam .....	.....	Camp Dennison...	860	" 12th, ..
153d	" J. Stough	J. S. Combs	Camp Dennison...	909	" 12th, ..
154th	" R. Stevenson	George Watt.....	Camp Dennison...	842	" 12th, ..
155th	" H. H. Sage	Robt. Chambers ..	Camp Dennison...	838	" 12th, ..
156th	" Caleb Marker	V. G. Miller.....	Camp Dennison...	877	" 17th, ..
157th	" G. W. McCook	W. M. Eames	Camp Chase	859	" 17th, ..
159th	" Lyman Jackson ..	Robt. Chambers ..	Camp Zanesville ..	874	" 11th, ..
160th	" Cyrus Reasoner..	John Kreps.....	Camp Zanesville ..	856	" 13th, ..
161st	" O. P. Taylor .....	.....	Camp Chase	855	" 10th, ..
162d	" E. Ball	D. A. Morse.....	Camp Chase	853	Stat'ned at Camp Chase.
163d	" Hiram Miller	W. H. Sutherland..	Camp Chase	839	May 13th, 1864.
164th	" J. C. Lee .....	.....	Camp Cleveland ..	865	" 15th, ..
165th	Lt.-Col. Bohlander ..	H. Mallory	Camp Dennison...	598	Stat'ned at Johnson's Island.
166th	Col. H. G. Blake	T. McEbright.....	Camp Cleveland ..	960	May 16th, 1864.
167th	" Thomas Moore	M. H. Haynes.....	Camp Hamilton	793	" 20th, ..
168th	" C. Garis .....	.....	Camp Dennison...	851	Stat'ned at Camp Dennison.
169th	" Nat. Haynes	Peter Beangrand..	Camp Cleveland ..	945	May 19th, 1864.
170th	" Miles J. Sanders ..	J. B. Crawford....	Camp Bell Air ...	851	" 17th, ..
171st	" Joel F. Asper....	F. C. Applegate...	Sandusky	898	Stat'ned at Johnson's Island.
172d	" John Ferguson ..	John Morgan	Cambridge and [Gallipolis, O.]	854	Stat'ned at Gallipolis, O.
Aggregate strength mustered in				35,987	

E.

Tabular Statement of the Muster Out of the Regiments composing the National Guard, under the call of May, 1864.

Regiment or Detachment.	Date of Arrival in State.	Date of Muster Out.	No.
130th O. N. G.	September 13.	September 22.	797
131st "	August 21.	August 25.	865
132d "	September 1.	September 10.	803
133d "	August 16.	August 20.	857
134th "	August 24.		867
135th "	August 28.	September 1.	688
136th "	August 24.		869
137th "	August 18.	August 19.	800
138th "	August 29.	September 1.	804
139th "	August 24.	August 26.	664
140th "	August 24.	September 3.	855
141st "	August 24.	September 3.	860
142d "	August 26.		845
143d "	September 5.		856
144th "	August 22.		834
145th "	August 23.	August 24.	832
146th "	August 31.	September 7.	822
147th "	August 26.	August 30.	787
148th "	September 6.	September 14.	775
149th "	August 22.	August 30.	755
150th "	August 17.	August 23.	907
151st "	August 23.	August 27.	816
152d "	August 31.	September 2.	821
153d "	September 7.	September 9.	753
154th "	August 24.	September 1.	743
155th "	August 24.	August 17.	785
156th "	August 28.	September 1.	841
157th "	August 29.		859
159th "	August 18.	August 21.	847
160th "	August 29.	September 7.	836
161st "	August 29.	September 2.	831
162d "	August 30.	September 4.	819
163d "	September 5.	September 10.	774
164th "	August 25.	August 27.	834
165th "	August 30.	August 31.	504
166th "	August 26.		960
167th "	August 31.	September 8.	765
168th "	August 24.	September 8.	767
169th "	August 26.	September 4.	873
170th "	August 28.	September 10.	788
171st "	August 17.		898
172d "	August 24.	September 3.	845
No. mustered out.			33,918

F.

Number of Promotions made during the year.

Name.	Rank.	Regim't.	When promoted.
J. Cullen Barr.....	Surgeon.....	1	Feb. 22, 1864.
Andrew J. Brockett.....	Assistant Surgeon.	1	April 22, 1864.
Barzilai Gray.....	do.....	4	May 17, 1864.
A. E. Jenner.....	Surgeon.....	5	Aug. 26, 1864.
J. G. Junkin.....	Assistant Surgeon.	5	Nov. 7, 1864.
Thomas J. Cronise.....	do.....	14	July 30, 1864.
William J. Kelly.....	Surgeon.....	15	Sept. 23, 1864.
Wm. M. Clark.....	do.....	15	Oct. 14, 1864.
John W. Vandervort.....	Assistant Surgeon.	16	July 13, 1864.
H. B. Fricker.....	Surgeon.....	20	Oct. 3, 1864.
James McClure.....	Assistant Surgeon.	23	April 23, 1864.
William Walton.....	Surgeon.....	25	July 30, 1864.
E. M. Wilson.....	Assistant Surgeon.	25	July 30, 1864.
David Rush.....	Surgeon.....	26	Sept. 26, 1864.
F. W. Inmann.....	Assistant Surgeon.	26	Sept. 23, 1864.
James G. Carr.....	do.....	26	Oct. 3, 1864.
Isaac Young.....	Surgeon.....	27	Nov. 1, 1864.
Edward P. Haines.....	do.....	29	Aug. 29, 1864.
Thomas B. Miser.....	Assistant Surgeon.	29	Aug. 24, 1864.
Elias S. Chapel.....	Surgeon.....	31	Oct. 3, 1864.
Thomas P. Bond.....	do.....	32	Sept. 21, 1864.
Lyonel J. Smith.....	do.....	33	Oct. 3, 1864.
Wm. T. Ropp.....	Assistant Surgeon.	33	Jan. 4, 1864.
J. P. Schilling.....	do.....	34	June 8, 1864.
Charles O. Wright.....	Surgeon.....	35	Oct. 3, 1864.
Frederick Hobly.....	do.....	37	April 28, 1864.
C. W. Myers.....	Surgeon.....	82	April 27, 1864.
W. B. Hedges.....	Assistant Surgeon.	82	April 27, 1864.
George Cassidy.....	Surgeon.....	83	Aug. 21, 1864.
A. M. Beers.....	Assistant Surgeon.	92	Aug. 13, 1864.
James M. Weaver.....	Surgeon.....	93	Sept. 19, 1864.
D. W. Humphreville.....	Assistant Surgeon.	94	April 7, 1864.
Charles F. Wilbur.....	Surgeon.....	95	June 10, 1864.
Wm. S. Gaines.....	Assistant Surgeon.	95	June 27, 1864.
W. A. McCracken.....	Surgeon.....	98	May 10, 1864.
Charles P. Simon.....	Assistant Surgeon.	98	May 10, 1864.
George Sadler.....	do.....	99	May 10, 1864.
D. H. Brinkerhoff.....	Surgeon.....	103	Aug. 1, 1864.
F. M. Andrews.....	Assistant Surgeon.	103	Aug. 9, 1864.
Eugene Ringler.....	Surgeon.....	106	Feb. 22, 1864.
John Knaus.....	do.....	107	Feb. 10, 1864.
Franz Schill.....	Assistant Surgeon.	107	Mar. 8, 1864.
J. C. Myers*.....	do.....	108	Sept. 28, 1864.
A. W. Pinkerton.....	do.....	110	April 1, 1864.
Wm. H. Park.....	do.....	110	July 13, 1864.
E. P. Ebersole.....	do.....	110	Sept. 5, 1864.
John W. Mock.....	do.....	111	July 10, 1864.
A. M. Beers*.....	do.....	115	July 15, 1864.
S. D. Richards*.....	do.....	115	Aug. 5, 1864.
J. W. Reed.....	do.....	115	Sept. 19, 1864.
W. Morrow Beach.....	Surgeon.....	118	June 3, 1864.
John E. Patterson.....	Assistant Surgeon.	118	April 27, 1864.
John C. Gill.....	do.....	120	Feb. 23, 1864.
George A. Haise.....	do.....	121	April 1, 1864.
N. B. Brisbine.....	do.....	123	Mar. 22, 1864.
Ithamar B. Weed.....	Surgeon.....	126	Aug. 1, 1864.
Joshua Worley.....	Assistant Surgeon.	126	June 25, 1864.
John Morgan.....	do.....	2d O. H. A.	Nov. 14, 1864.
W. B. Boyd.....	Surgeon.....	3d O. V. C.	Dec. 1, 1864.
W. W. Bickett.....	Assistant Surgeon.	3d O. V. C.	Mar. 31, 1864.
Orestes G. Field.....	Surgeon.....	4th O. V. C.	Mar. 8, 1864.

Number of Promotions made during the year—Continued.

Name.	Rank.	Regiment.	When promoted.
Cyrus F. H. Biggs.....	Assistant Surgeon	4th O. V. C.	Nov. 26, 1864.
D. V. Rannels.....	Surgeon	5th O. V. C.	Oct. 20, 1864.
Joseph Hebble.....	Assistant Surgeon	5th O. V. C.	Jan. 19, 1864.
A. D. Rockwell.....	do	5th O. V. C.	April 7, 1864.
Charles H. Pinney.....	do	9th O. V. C.	April 23, 1864.
James F. Gardner.....	do	10th O. V. C.	Mar. 8, 1864.
N. S. Richardson.....	Surgeon	13th O. V. C.	Oct. 19, 1864.
Robert C. Downing.....	Assistant Surgeon	13th O. V. C.	Aug. 8, 1864.
C. E. Tupper.....	do	41	Aug. 27, 1864.
H. McFadden.....	do	42	Jan. 6, 1864.
Charles E. Poe.....	do	43	April 6, 1864.
M. J. Bowland.....	Surgeon	44	Nov. 1, 1864.
D. P. Smedley.....	do	46	Sept. 19, 1864.
Wm. H. Park.....	do	49	Sept. 24, 1864.
S. A. Smith.....	Assistant Surgeon	49	May 10, 1864.
Samuel H. Spencer.....	do	49	Aug. 19, 1864.
E. D. W. C. Wing.....	Surgeon	51	June 25, 1864.
N. S. Hill.....	do	52	Oct. 28, 1864.
S. A. Simpson.....	Assistant Surgeon	52	May 19, 1864.
John A. Lair.....	Surgeon	53	Nov. 17, 1864.
Samuel Mathers.....	Assistant Surgeon	53	Nov. 17, 1864.
Joseph Hebble.....	Surgeon	55	Nov. 1, 1864.
Robert H. Millikin.....	Assistant Surgeon	57	May 10, 1864.
John A. Saylor.....	do	62	Feb. 27, 1864.
Hugh P. Anderson.....	Surgeon	64	July 25, 1864.
Moses H. Quinn.....	Assistant Surgeon	64	July 25, 1864.
J. A. Dickson.....	do	65	Sept. 21, 1864.
M. A. Brown.....	Surgeon	68	Sept. 26, 1864.
E. C. De Forest.....	Assistant Surgeon	68	Oct. 25, 1864.
J. M. Shoemaker.....	do	70	June 7, 1864.
John A. Jaume.....	do	75	Aug. 25, 1864.
Andrew Wall.....	Surgeon	77	Aug. 10, 1864.
M. Valentine.....	Assistant Surgeon	77	Sept. 3, 1864.
George F. Peckham.....	do	78	May 25, 1864.

G.

Deaths of Medical Officers for 1864.

Name.	Rank.	Regiment.	Date.	Where.
G. S. Guthrie*.....	Assistant Surgeon.	32	Feb. 20.	Chattanooga.
Francis D. Morris*.....	Surgeon	35	Sept. 23.	Hamilton, O.
A. J. Rosa*.....	Assistant Surgeon.	52	Feb. 20.	Lookout Mt.
Moses B. Haines*.....	do	69	October	Spring Valley, O.
†.....	Surgeon	91	October	Cedar Creek, Va.
F. W. Marseilles*.....	do	98	May 1.	Chattanooga.
G. W. Sayres*.....	Assistant Surgeon.	102	Sept'r	At home.
D. H. Silver*.....	do	111	June 27.	Knoxville, O.
R. H. Tullus*.....	do	7th O. V. C.	Sept'r	Ripley, O.
H. H. McAbee†.....	Surgeon	4	Sept'r	At home.
F. M. Andrews*.....	Assistant Surgeon.	103	October	Atlanta.
W. W. Holmes*.....	Surgeon U. S. V.	.....	March.	At home.
W. W. Bridget.....	Surgeon	46	Aug. 6.	Marietta, Ga.
James W. Thompson*.....	do	10th O. V. C.	Nov. 25.	At home.
Z. Northway*.....	Assistant Surgeon.	6th O. V. C.	Nov. 10.	At home.

* From disease contracted in the service.

† Killed in battle at Cedar Creek, Va.

‡ Killed by railroad accident on his return home.

RECAPITULATION.

Summary of Medical Officers Appointed, Resigned, Mustered Out, Promoted, Dismissed and Deceased, during the year 1864.

Appointed.

Surgeons.....	85
Assistant Surgeons	164

Resigned and Mustered Out.

Surgeons.....	33
Assistant Surgeons	83

Promotions.

Assistant to Major Surgeons	69
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Dismissed.

Surgeons.....	--
Assistant Surgeons*	3

Deceased.

Surgeons.....	7
Assistant Surgeons	8

* Two of these, upon proper hearing, were restored to their commands.

Chronic Diarrhœa and its Complications; or the diseases arising, in the army, from a too exclusive use of Amylaceous Food; with interesting matter relating to the Diet and Treatment of these Abnormal Conditions; and a new Army Ration proposed, with which this large Class of Diseases may be avoided. By J. H. SALISBURY, M.D., Professor of Histology, Physiology and Pathology, in Charity Hospital, Medical College, Cleveland, Ohio.

The diseases arising in the soldier, from too exclusively feeding upon any one kind of food, are far more numerous than has been previously supposed. It has long been known that the too exclusive use of salt meats tend to produce scorbutic states. More recently it has been determined that fresh meats also, under similar circumstances, produce like conditions. These conditions are best counteracted by the free use of vegetable food, and the vegetable acid salts of potassa and iron. It becomes my duty now to add to this list of scorbutic excitants, *vegetable food*, and especially that of an *amylaceous* and *leguminose* character. These are eminently *scorbutic excitants*. The diseased conditions produced, however, by them, are of a peculiar type, differing in many particulars from those produced by animal food.

When the scorbutic taint is caused by the too exclusive use of amylaceous and leguminose products, these conditions—instead of being best treated by the free use of *vegetables*, and the *vegetable acid salts of potassa and iron*—require, with the latter, *albuminous animal food*; as these conditions have been excited by the absence of this kind of aliment.

The abnormal states produced by a too exclusive amylaceous diet, differ from those produced by one that is too exclusively animal. They present themselves, first, in a deranged condition of the alimentary canal and nervous system, with a remarkable tendency to fibrinous depositions in the heart and lungs (Thrombosis and Embolia); while the scorbutic taint from meat, shows itself usually first in the skin and mouth, the blood being thin, and there being little or no tendency to fibrinous depositions. Both often result in pains and aches in the extremities and back, simulating those of chronic muscular rheumatism.

The great class of diseases that are so peculiar to the army, and that are so obstinate when subjected to the treatment used in what appears to be analogous conditions in private practice, really belong to abnormal states excited by insufficient or imperfect alimentation and fermentative conditions and to a peculiar *scorbutic taint*, developed by the too exclusive use of an amylaceous diet. In this group of army diseases, may be placed *chronic diarrhœa*; *paralytic conditions*; *fibrinous depositions in the heart* (Thrombosis); *the clogging up of the pulmonary vessels with fibrinous clots* (Embolia); *the tendency to tuberculosis*; *loss of voice*; *the so called muscular rheumatism*, and *the majority of the diseases of the eye and ear*. Exclude these frequent and obstinate complaints from the army, and nearly all the diseases are removed that now play so important a part in decimating our forces and filling up our hospitals. If these diseases arise from the too exclusive use of any one kind of food—which we shall in the following pages plainly demonstrate—they are pre-eminently preventable; and hereafter, their existence in the army will be evidence—if the proper food be provided, as here suggested—that the medical or military authorities have been neglectful of their duties.

The food of the soldier, above all things, should be of such a character

as to not develop in him disease. This should be of the first consideration. In the second place, it should contain those nutrient products which will support the wear and tear of his tissues in the fatigues of the march, and enable him most fully to accomplish the labor expected of him.

Governments have, until recently, been slow to recognize the important necessity of paying the greatest possible attention to the alimentation of their armies. The result has been a fearful mortality from scorbutic diseases. The war between the Allies and Russia has done more perhaps in attracting public attention to this matter, than any event in modern times. The disease and suffering in the allied armies from defective alimentation and scorbutic invasion, during the first winter and spring of the campaign, were frightful.

More attention has been paid to the feeding of our armies than has ever been done in any other country. The ration has been not only larger, but contains a better proportion of the various kinds of food for healthy alimentation. The result has favorably exhibited itself in the superior health of our soldiers above those of other modern armies. Our soldiers are better clothed and fed than those of any foreign country. Still there is large room for improving the condition of our men in the field; by supplying them with a proper admixture of food so light and portable that they can at all times have it, and which will prevent the long list of peculiar diseases previously mentioned, arising out of a too exclusive use in campaigns of an amylaceous diet.

The investigations connected with the cause, treatment and prevention of chronic diarrhœa; paralysis; the deposition of moccas and ropes of fibrin in the heart (Thrombosis); the lodgment of fibrinous clots (Embolia) in the pulmonary vessels; the disposition to tuberculosis; and what simulates muscular rheumatism; the loss of voice; and diseases of the eye and ear, have been pursued with unremitting zeal. This inquiry has been attended with great labor. The detailed microscopic examination of the fecal matters and excretions of several hundred cases of chronic diarrhœa, in the hospitals of all parts of the country, has been a work so disagreeable and laborious, that no inducement, save the importance of the subject, could have persuaded me to have pursued it so thoroughly. The results arrived at are highly interesting in throwing valuable light upon the cause, treatment and prevention of this dreaded and obstinate disease; and in pointing out the great importance of changing the present army ration during active campaigns.

Chronic diarrhœa appears to be, in almost every region, a certain accompaniment of armies. The extent to which it prevails in any given instance appears to be somewhat in proportion to the malarial condition of the district, the reason of which will more fully appear further on. In our armies it has done more to weaken and decimate them than all other diseases. It is the disease, both on account of its prevalence and its lingering character, that so fills up our hospitals.

In the English Medical and Surgical History of the Crimean War, it is stated that: "Diseases of the bowels, the constant scourge of armies, affected the English troops to an alarming extent in the Crimean war. For one-third of the 18 months embraced, they presented a more fatal aspect than had ever before been recorded." Dr. Macleod, in referring to this subject, says: "The food provided for the army during the first winter and spring was defective both in quality and quantity. This arose partly from unavoidable circumstances, and partly from inexperience in the offi-

cers to whose care was intrusted the supply of the army. *Salt meat and biscuit* constituted the bulk of the distribution; while rice, coffee and sugar were occasionally but sparingly added."

During the Mexican war our soldiers suffered much from chronic diarrhœa. Of those who returned a large number never fully recovered, and many eventually died, emaciated and worn out. In our own army, during the present war, chronic diarrhœa, with its complications, has been the disease which has done more to weaken our forces than all others combined. It is painful, exhausting and protracted, and makes up not only a large proportion of the sick list, but is frequently fatal. It may terminate fatally or favorably in a few days or weeks; but generally runs on for months or even years, in which latter case the system becomes so affected with intercurrent organic disease, that there is seldom hopes of any thing but a sooner or later fatal termination; either from the primary disease itself or from some of its complications.

The large majority of the cases of this disease in our army have occurred either during or immediately following campaigns. It occurred largely during and after the Peninsular campaign; during and following the crossing of the Rappahannock by Hooker; during and subsequent to the retreat of Pope; on and after the march through Maryland to Antietam; and during and subsequent to the rapid march to, and battle of Gettysburg. In the west it has been also the prevailing disease, and occurred largely at the march on Nashville; at Pittsburgh Landing and Corinth; at the campaign at the rear of Vicksburg; at Port Hudson; at Murfreesboro and Stone River; and at Chattanooga and Chickamauga. In fact, wherever there has been a campaign of any duration, when the men have been thrown upon army biscuit, as an almost exclusive and constant food—if even but for a few days—chronic diarrhœa, with its singular complications, has largely appeared.

The Peninsular Campaign, under McClellan, and the march to the rear of Vicksburg, under Grant, have been two of the most fatiguing and lengthy campaigns of the war, during which the soldiers largely subsisted upon a dry, farinaceous diet. These campaigns have afforded more obstinate and fatal cases of this disease, than any half dozen of the others. Melancholy records of them still linger in the hospitals of all parts of the country. The Peninsular Campaign was more fruitful in cases of what appeared to be muscular rheumatism, of paralysis, loss of voice, fibrinous depositions in heart and lungs and diseases of the eye and ear, than any other. No campaign has turned out more obstinate and fatal forms of the diseases arising from a too exclusive use of amylaceous food, than this.

The derangements of the system, arising from the too exclusive use of amylaceous food—and, especially, the hard army bread or biscuit—are various and peculiar, and throw interesting and valuable light upon many diseased conditions. They open up a wide field for careful research, and point us to simple preventable excitants as the true causes of some of the gravest abnormal conditions. That amylaceous aliments, when too excessively used, should excite paralytic states and tendencies, is most highly interesting. That this same kind of food should have a tendency to excite in the system a saccharine and fermentative state, and should produce a disposition to fibrinous depositions in heart and lungs, (thrombosis and embolia), and a susceptibility to diseases of the eye and ear, is also most highly important and suggestive. It reminds us that, perhaps, to the food we eat, we may look for a great share of the "ills that flesh is

heir to." These abnormal conditions become simple systemic expressions, that warn us of transgressions in dietetic laws.

Scarcely any thing has been done, except by way of accident, in tracing nicely the peculiar effects and influences upon the system, of living exclusively, for a length of time, upon individual kinds of food. Here is a field, at the very threshold of our existence, so simple in itself that it has been entirely passed over by the investigator, who is busying himself in exploring, in the obscure mazes beyond, for those very causes of disease which he is daily taking into his system in the food he eats for nourishing and invigorating his body.

In feeding either exclusively or too largely upon army biscuit for any length of time, diarrhoeic conditions, paralytic tendencies, a disposition to fibrous depositions in the heart and lungs, pains in the extremities and back, and derangements of the ear and eye, may all be present, or only a portion of them.* In a majority of cases the most of them are present to a greater or less extent. These derangements will all be treated of under the head of chronic diarrhœa. Although in many instances the diarrhoeic symptoms and derangements of the eye and ear are entirely absent, while the other intercurrent abnormal states are strongly marked.

These are, one and all, but symptomatic expressions of a peculiar diseased condition of the organism produced by one kind of imperfect or defective alimentation, and are to be cured by first removing the cause, and not until then will the appropriate dietetic and remedial agents address themselves kindly to the repairing of the various organic lesions, and to invigorating the enfeebled and enervated physical and mental powers.

SYMPTOMS.

In feeding exclusively or too largely upon "army biscuit," for any considerable length of time, diarrhoeic conditions, paralytic tendencies, with sometimes loss of voice, a disposition to fibrinous depositions in the heart and pulmonary vessels, (thrombosis and embolia,) pains and aches simulating muscular rheumatism, and derangement of the eye and ear, may all be present, or only a portion of them. In a majority of cases the most of them are present. These abnormal conditions, all arising from one and the same cause, will all be treated of under the head of *Chronic Diarrhœa*.

Chronic Diarrhœa.—This disease, with the other intercurrent abnormal states, that arise from the too exclusive use of a dry amylaceous diet, may be conveniently divided into three stages: the *Incubative*, the *Acute*, and the *Chronic*.

Incubative Stage.—The diarrhœa is preceded in all cases, that are uncomplicated,† by a constipated condition of the bowels. This is, however, generally overlooked by the patient, from the fact that frequently the diarrhœa comes on gradually; first having only one profuse passage in the twenty-four hours, and this taking place in the latter part of the night. The appetite being good, and there being no pain, save immediately preceding the passage, this condition is allowed to run on uncared for, frequently for some time, till the passages have increased to from four to ten

* There is strong probability that the condition of the system which tends to the development of Erysipelas and Hospital Gangrene, may have a similar origin.

† The complicated varieties are such as are directly excited into activity by the enervating effects of other diseases, as dysentery, intermittant, bilious remittant and typhoid fevers, etc.

per day, mostly during the night. The patient now applies for treatment, and almost invariably reports to the Surgeon that his diarrhœa has been preceded by looseness. The incubative stage of the disease has made no impression upon him, and he only remembers that his bowels have been loose for some time. If, however, his case be carefully traced back, a preliminary constipated period, often of several weeks' standing, will be found to have existed. During this period of constipation the patient has had from one to four scant, difficult, and either hard or plastic passages per week. During the evening and night he has been troubled with the development of gases in his stomach and bowels, often distending them so as to excite pain through from one side to the other, accompanied by eructations and passages of wind.* This development of gases in the alimentary canal, goes on increasing during the incubative stage, till the diarrhœa sets in. During this constipated period there is also a paralytic tendency. This shows itself first in the large intestines, in a want of normal sensibility and peristaltic action; and then in the lower extremities, which exhibit prickling sensations, and are liable to "get asleep," as the patients describe it. There is a mixed up *numb* feeling in the head, with frequently a confused condition, ringing in the ears at night, and muscoe volitantes. The bronchial and pulmonary membranes become more or less irritated, frequently attended with a feeling of constriction about the chest, with a cough during the night and toward morning, and, after getting up, with the expectoration, often, of thick, cream-colored, sweetish mucus. The tongue is generally unusually clean and watery, with a red border and a red streak down the center, which central streak sometimes feels sore. There is often slight palpitation of the heart, with a tendency to fibrinous depositions in its cavities and in the pulmonary vessels. The voice becomes often hoarse, with a peculiar stiff, constricted feeling in the pharyngeal and laryngeal region. There is a lassitude about the muscles, which is rather dispelled, than otherwise, by exercise. Appetite good.

With many the symptoms of this incubative stage are not very strongly marked, especially when the soldiers are actively engaged. After a short time, in such cases, it frequently passes away, the alimentary canal adapting itself to the dry, amylaceous food, so that digestion goes on normally, and the passages become quite natural in consistence, color and frequency. When this period is once passed, the tendency to have the diarrhœa from living upon starchy food, is much lessened, and the patients are now disposed to become more plethoric than usual. They feel, however, less tonicity of the system, and readily tire, and frequently are troubled with palpitations and short and hurried breathing, after any severe fatigue. If, however, the system becomes debilitated, through any cause, such as from typhoid, intermittant or bilious remittant fever, etc., there is a marked tendency to diarrhœic conditions, which, if not early subdued, become chronic and more difficult to control.

Quite frequently, cases are met with of remarkably strong and healthy digestive organs, where the paralytic tendencies of the incubative stage continue, without exciting diarrhœa. In such cases, there is a strong disposition to fibrinous depositions in the heart (thrombosis); and to the lodgment of fibrinous clots (embolia) in the pulmonary vessels, producing congestions and "smothering" sensations. There is also a tendency to tuberculosis, and diseases of the eye and ear, with partial paralysis of

* Often the bowels become so paralyzed that the patient is unable to pass the generating flatus; and hence he frequently becomes enormously distended.

the larynx, with pains and aches in the extremities and back, simulating muscular rheumatism. Such men are soon disabled and become permanent inmates of hospitals; and not many months elapse before the abnormal states advance so far that the diseased conditions become obstinate and often incurable. Frequently this class of patients become so paralysed that they are unable to help themselves. In others, symptoms present themselves resembling somewhat those of muscular rheumatism, without the swelling and redness, but which are really scorbutic in character, and like those previously mentioned, originate from the want of a proper admixture of the necessary ingredients for healthy alimentation.

Acute Stage.—The incubative stage is followed by a looseness of the bowels, or diarrhœa more or less marked, with the development largely of gaseous products in the stomach and intestines, particularly during the evening and night. The first diarrhœic stools generally come on towards morning. There is usually, at first, but a single passage daily, and this occurs in the latter part of the night or early in the morning. With it is passed much wind. Before the passage and immediately after there is a heat and throbbing in the lower portion of the large intestines. The evacuation is followed by a general feeling of relief, and usually there is no uneasiness about the bowels during the subsequent day. Nothing abnormal is felt till the following evening, when the stomach and intestines become again distended with flatus which appears in active motion. This continues through the night, or until the profuse evacuation, which is generally more watery than that of the first night, and is accompanied and followed by the same train of symptoms. This state of things may continue, slightly increasing, for from two to ten days, according to the food, exercise and condition of the system. Finally the bloating during the night, and the passages following and accompanying the same, become so frequent and disturb the rest of the patient so much, that he applies for medical treatment.

During the acute stage, there is a highly fermentative tendency in the alimentary canal during the evening and night, accompanied by more or less pain. The passages during this stage frequently suddenly increase from one or two daily, to twenty and more, the patient in a few hours becoming reduced so low that he is unable to get up alone; and the large intestines and sphincter become so paralyzed that the feces are passed involuntarily in bed.

The paralytic tendency, and the ringing in ears, and the pulmonary and bronchial symptoms, are more marked than in the incubative stage. The heart becomes irritable, and is thrown into violent palpitations often by excitement. The tongue becomes red, swollen, smooth, or loose and watery; the voice is often husky, and sometimes reduced to a whisper; and rheumatic pains, or what simulates them, occur in the extremities and back, and the urine becomes scanty, and often loaded with oxalates of lime. During this stage—which lasts for several days, the time varying according to the diet, exercise and condition of the patient—the disease readily yields, usually, to a simple cathartic dose of Rochelle salts, followed by the vegetable acid salts of potassa soda and iron in dilute solutions, and an albuminous animal diet. If, however, neglected, or attempts are made to suppress it with opium and astringents, and light farinaceous diet, the abnormal alimentary conditions invariably become worse, and the diarrhœa reappears with aggravated symptoms, and soon becomes chronic. There is more or less congestion of the whole alimentary canal, and especially of the stomach and large intestines, which are frequently

more or less inflamed.* This condition yields more readily to the remedial and dietetic means above referred to than to the ordinary remedial measures resorted to for subduing the usual inflammatory conditions. The discharges are thin and foamy—like yeast—a single passage frequently nearly filling a large chamber, very much to the surprise of both patient and attendants. In color they are either clayey, brownish, pinkish of normal, and contain more or less mucus and gelatinous (colloid) matter the latter being in little jelly-like lumps disseminated through the fecal matters. In later stages blood is frequently present. Fragments of undigested food and crystals of the triple phosphates and of oxalate of lime are scattered abundantly through the stools. Fragments of intestinal epithelium, and casts of the glandules of Lieberkuhn and often the follicles of Peyer are found in the discharges.

Chronic Stage.—During the chronic stage, the stools range from three to twenty and sometimes more per day. They occur more frequently during the night and morning than during the balance of the day, and are preceded and accompanied by the development and eructation and passage of much flatus.* The intestinal gases appear to be constantly in motion, indicating active fermentation. During the day the passages are less frequent, and there is less flatus and intestinal uneasiness. The appetite is generally good and sometimes unusually so, there being no difficulty in retaining food on the stomach. The passages are usually of a pale, ash color, thin and watery, or gelatinous and slimy, in which are disseminated in greater or less abundance—according to the severity of the case—lumps of jelly-like gelatinous (colloid) matter, frequently streaked with blood, and sometimes masses of cream-colored pus.

In other cases they are, especially in the advanced stages, various shades of green and brown, from gelatinous colloid matter and altered blood. The pus in the feces is distinguished from the colloid matter and mucus by its cream color and its readily mixing with water. The mucus and colloid matter are more glaizy—like the white of an egg—and do not mix with water. The colloid matter has a yellowish and sometimes greenish tinge, and occurs in lumps and ropes, disseminated through the fecal matter, by which it is readily distinguished from the mucus, which covers the outside of the feces with a slimy layer, when they have sufficient consistence, and when not it is so mixed with the fecal matter as scarcely to be distinguished, save by the ropiness or slimy character of the passages. During this stage there is more or less uneasiness, pain and swelling in the epigastrium, and a constant tenderness, especially during nights, along the track of the colon and rectum; and in severe cases there is often complete paralysis of large intestines and sphincter, so that the feces are passed involuntarily in bed. Frequently, in such cases, the passages are composed almost entirely of gelatinous matter, which is sometimes of a dark dirty green color by reflected light, and greenish yellow by transmitted light. This matter is frequently taken for bilious secretions. Under the microscope, it is found to be composed of what appears to be aligid cells and filaments, in little gelatinous masses. The appetite is variable, though generally remarkably good, considering the gravity of the lesions. During this stage there is a paralytic tendency showing itself, more or less, in the lower bowels and inferior extremities. The legs are very apt to prickle

* Frequently the intestines are so thoroughly paralyzed that the patients are unable to pass the flatus, it remaining, distending the abdomen to a most uncomfortable extent.

and "get asleep," as the patients describe it. There is also more or less bronchial and pulmonary irritation, with night and morning cough, expectoration of a sweetish cream colored mucus, and often a constricted feeling in one or both lungs, with a marked tendency to the clogging up of the pulmonary vessels with embolia, and to tubercular depositions. The disposition to functional and organic disease of the heart is increased in this stage; the symptoms of which is frequently strongly marked. Ringing in the ears is frequent at night, and there is also an amaurotic tendency, with ulcerations of the cornea, especially in advanced stages of the disease. There is considerable thirst, a watery state of the mouth and fauces, tongue generally unusually clean, and often red and watery, and sometimes bloody; urine small, and sometimes loaded with lithates; a dry, harsh, bran-like, scaly skin; a sense of uneasiness; dull pain and heat about the lower bowels; pain and tenderness in the epigastrium; and more or less pain and weakness in the lower extremities and back; frequent chilliness, intermitted occasionally by flashes of heat; a general sense of weariness and indisposition to either bodily or mental exertion; and if the disease is not checked a daily increasing emaciation. Dyspeptic symptoms show themselves, especially during the evening and night, such as acidity of stomach, sour eructations, distension of stomach and intestines with flatus, which is in constant motion, oppression or weight in the epigastrium, burning sensations about the pericordia, etc., with palpitation of the heart. The appetite, however, is seldom impaired to the extent that the lesions would seem to indicate; but, on the contrary, is often increased. As the disease progresses, and the passages increase in frequency, there is often an increased craving for food and drinks, with greater dryness of skin, mouth and fauces, and a sensation of sinking, tenderness and weakness about the stomach. The food, notwithstanding the amount consumed, produces no increase of flesh; on the contrary, a steadily increasing emaciation is almost always noticed, with increasing enervation of body and mind. The general temperature of the body is somewhat lowered, either phosphuric or oxaluric symptoms set in, and the patient becomes peevish, fretful, complaining and hypochondriacal, magnifying his pains and sensations. The memory becomes impaired, and the sick man more or less childish. There is a disagreeable exhalation from the surface of the body and from the pulmonary membranes. The feces have a peculiar offensive fermentative odor, and the urine is small and is generally loaded with lithates and oxalates. The tongue is usually clean and watery, with red edges and centre, and is sometimes bloody; and there is a peculiar disposition to an irritable condition of the pulmonary membranes, with tickling sensations, and night and morning cough and expectoration of thick, sweetish yellow mucus, some oppression at times in breathing, and frequently a peculiar constricting sensation in the pharynx in going through with the act of swallowing. Where there is a predisposition to phthisis, the disease is very apt to be rapidly developed. The gums sometimes assume a reddish, spongy appearance, and readily bleed; and the breath is very offensive. Palpitation of the heart becomes a frequent and troublesome symptom. There is often irritation, to a greater or less extent, in the bladder and urethra, with icteroid tendencies. In this stage of the complaint there is a remarkable tendency to tubercular development in the lungs, with the usual attendant symptoms. The patient sinks rapidly, the emaciation and debility become extreme, and sometimes what appears to be a peculiar diphtheretic exudation, but which is really yeast

plants developing in the glycogenic mucous secretions,* shows itself creeping up in the pharynx and fauces, and finally dips down into the larynx, and the patient soon expires, exhausted, apparently, from the want of nourishment, which, although taken freely, is not appropriated, it passing in the feces mostly undigested.

In the alimentary canal of all soldiers in active service there seems to be excited a peculiar fermentative tendency and scorbutic condition. This condition renders them very susceptible to attacks of chronic diarrhœa, whenever their symptoms are enervated by other diseases, such as dysentery, intermittent, bilious remittent or typhoid fever, over-fatigue, or other causes that enfeeble the system and impair digestion. This is the reason why chronic diarrhœa so often follows and accompanies these diseases. In such cases it appears merely as a complication of other pathological conditions, which modify its incubative and acute stages, so that the preceding remarks, relating to the history and progress of the several stages of uncomplicated chronic diarrhœa are not strictly applicable to this class of cases. The conditions, however, in the chronic stage of both are alike, and require the same management, diet and treatment.

There appears to be in armies a peculiar condition of the alimentary canal, even in *well soldiers*, (as is evidenced by post mortems of those that are shot dead in battle,†) predisposing them to attacks of chronic diarrhœa, upon exposure to any cause that enervates the system and impairs digestion. This condition is a chronic one that gives no particular pain or inconvenience‡ to the soldier, unless excited into activity by enfeebling influences, such as attacks of fever, dysentery, over-fatigue, insufficient and improper food, or other debilitating causes. This chronic condition is the same in nature as that of chronic diarrhœa, it only being less in degree, and arises from the same cause.

There is in this disease a remarkable tendency to the formation of fibrinous deposits in the heart and pulmonary vessels, and to tubercular depositions in the lungs. Usually the system has not long been under the influence of the disease before there are indications that these abnormal formations have already begun. In later stages night sweats set in and frequently become very enervating and unpleasant symptoms. The skin becomes dry and scaly, the urine scanty, the abdomen sunken, pulse from 90 to 140 per minute, voice husky and hollow, and sometimes reduced to a whisper, the cornea occasionally ulcerates, and not unfrequently, in severe cases, fatal congestion of the lungs or brain set in, and prove fatal in a few hours. Sometimes obstinate renal congestions occur, accompanied by suppression of urine, and consequent uremic poisoning, which prove fatal.

* There appears to be excited in the system a highly saccharine condition, the secretions all passing readily into fermentative states developing yeast plants.

† See Medical and Surgical Reports of Crimean War, where post mortems of well soldiers shot dead in battle are described.

‡ One reason why intestinal lesions pass unnoticed by the apparently well soldier is owing to the paralytic condition of the intestinal walls, caused by a too exclusive use of amylaceous food.

MICROSCOPIC EXAMINATION OF FECES.

The microscopic examinations of the fecal matters of well-marked cases of *Chronic Diarrhœa*, were commenced in the hospitals at Washington. The patients had contracted the disease during the Peninsula campaign. These cases were numerous, well-marked, and obstinate, and many terminated fatally.

The examinations were extended to the hospitals of Tennessee, Kentucky and Ohio, and finally to those of Philadelphia. The feces of several hundred well-marked cases, during this extended and most disagreeable labor, were subjected to a careful microscopic examination, and the results recorded, and drawings made of the abnormal bodies found. These detailed examinations of individual cases are herewith submitted, so far as necessary to give a clear idea of the character of the labor, the varied forms of the disease, the pathological states excited, &c., &c.

I will here merely state, that wherever a campaign of any extent, requiring rapid movement, has occurred, the men have been thrown mostly upon a diet of hard biscuit and coffee. This diet invariably has tended to produce constipation, flatulence, and fermentative changes in the retained alimentary materials, and these have been followed sooner or later by the abnormal conditions previously described under the heads of the *Incubative*, *Acute*, and *Chronic stages* of chronic diarrhœa. The microscopic examinations have thrown much light upon the cause of many diseased conditions, and indicated the means of preventing and curing them, and suggested the experiments which will be found further on, connected with the production of chronic diarrhœa and its intercurrent abnormal states, by the use of army biscuit as a diet.

In the fecal matters of all the well-marked cases, I found a peculiar, very large thick-walled cell-body, developing by segmentation sometimes, and by actual growth from smaller cells in others, and which, in its active stage of development, was filled with highly refractive large cell nuclei, which at maturity escaped and were developed frequently into filaments, along which were scattered remnants of the cells.* These filaments had much the appearance of some confervoid growths; and the large cases, the sporangia, in which the cells forming the filaments were developed. This growth usually occurred in the fecal matters, in little gelatinous, ropy, translucent masses, often of a greenish or yellowish tinge. These jelly masses, on exposure to sunlight, have a tendency to become green. Occasionally a case is met with where the entire discharge is this ropy or lumpy, translucent, jelly-like matter; and in such cases it is usually of a dirty dark green color by reflected light, and a dirty greenish yellow, in thin layers, by transmitted light. These discharges often deceive the physician into the opinion that he has succeeded in promoting hepatic secretion, which he frequently construes favorably, when in fact his patient is really worse—this matter being almost entirely made up of the peculiar cells and filaments here referred to.

CASE I.—*History*.—Wm. Rose, private, Tod Scouts; German; age about 28. Was attacked with dysentery, which was followed by chronic diarrhœa, the second week in August. Was previously strong and robust. Saw him September 29th; patient reduced to a mere skeleton; appetite very good, but eating does not seem to satisfy him; has a pale, anxious look, eyes sunken, skin dry, scaly, and clinging to bones; stools frequent,

* The drawings of the bodies found in the feces, I regret, I am unable to give in this paper. It has been impossible to get the engraving properly done.

small, ropy, gelatinous, and of a dirty green color; urine small, dark colored, oxaluric, and loaded with lithates; so weak that he cannot raise himself up in bed. The parotid gland on the right side is swollen, hard and red, and there is considerable pytalism. The patient is weak, hypochondriacal, and is not expected to live a week longer. He has had no mercurial preparations for the last ten days. For the last three days he has been taking small doses of turpentine, during which time the parotid gland has been swelling.

Dr. C. D. Palmer, Acting Asst. Surg. V., has charge of this case.

Microscopic Examination.—The fecal matters were carefully examined under the microscope. The dirty dark green gelatinous discharge was made up of large, highly transparent, thick-walled cell-cases, some of which were empty, and others filled with large, highly refractive, thin-walled cells, containing in some instances what appeared to be minute, oblong, spheroid bodies. These large cases were imbedded mostly in the gelatinous matter, and were surrounded by gelatiniform filaments, along which were remnants of cells internally. *Torrula* cells occurred in multitudes in this matter, and also the spores of another fungus of an entirely different character, and which appeared to be those of a species of *pennicillium*. These were rapidly vegetating, the filaments already being (when magnified 300 diameters) from $\frac{1}{2}$ an inch to 3 inches in length. This latter plant is usually found in abundance in all those cases where the stools are green and gelatinous.

This patient died October 10th, eleven days after the examination of the feces. Before death his breathing became hurried and labored, and he expectorated considerable mucus mixed with pus.

Post-mortem, four hours after death, by Dr. C. D. Palmer, Acting Asst. Surg. V., who has kindly furnished me with the following:

"No adipose in any part of the body. Omentum entirely free from fat, highly congested, and dark in color.

Stomach, not examined.

Small Intestines, congested in streaks and patches; otherwise quite normal.

Large Intestines, were thickened throughout their entire length. The villi and follicles were enlarged, and elevated above the surface of the mucous membrane, forming little vascular fungoid masses, from one to three lines in diameter, larger above and constricted below. These were more numerous in the rectum and descending colon, than towards the coecal valve. In several places these fungoid elevations were breaking down and ulcerating. The spaces between the enlarged follicles and villi, were of a red beef color.

Lungs.—The lower and posterior part of right lung was hepatized and in an incipient stage of suppuration; the adjoining lung around this was in a state of red hepatization; and the left lung was also in the same state. Sero-purulent fluid to the amount of 4 or 5 ounces in the pleural cavity of the right side, and 3 or 4 ounces in that of the left.

Liver, normal.

Spleen, somewhat enlarged and softened."

CASE II.—*History.*—George Simpson, sergeant, Co. I, 83d O. V. I. This patient has been sick with chronic diarrhœa for nearly a year. Has been gradually sinking; is confined mostly to his bed. He is much emaciated; pale, eyes sunken, and is very desponding. Occasionally for a week he will appear to be recovering, and his stools more natural. These periods appear to be remissions in the disease. It returns always in a few days, reducing the patient again, so that he has to take his bed.

Saw him September 30. His stools were moderately thin, of a pale ash color, through which were scattered small gelatinous masses of a pale greenish tinge. Has only about one passage of urine in 24 hours. Urine high colored, and deposits on standing large quantities of lithates.

Microscopic Examinations.—The fecal matter was filled with what appeared to be disintegrating epithelium. The large cell-cases, mentioned in Case I., were abundant in the greenish gelatinous masses. There was also a multitude of forrula cells, but none of the vegetating spores found in the preceding case.

CASE III.—J. B. Loomis, private, Co. A, 8th Mich. V. I.

History.—Found the patient desponding; eyes sunken, skin dry, body considerably emaciated; confined to bed, having several rather copious passages daily, which were very thin and watery, and in which fragments of comminuted undigested food settled. The following history and treatment of the case has been kindly furnished me by the attending physician, C. T. Simpson, Surg. U. S. V.:

“Admitted into West End U. S. A. Hospital, Aug. 12, 1863. He says that he has been sick and in hospital six and a half months with chronic diarrhœa. Previous to enlistment he had been an invalid for five years, having had dyspepsia during that time. He entered service as a musician, and had only performed such service. On admission, the patient was quite weak and debilitated; tongue almost clean, pulse feeble, skin jaundiced; had no appetite; very little diarrhœa at present. To have beef tea and brandy toddy.

Aug. 16.—Condition about the same as on admission, except not quite so weak.

R—Ext. cinchonæ comp., ʒi.

Ammonium muriat., ʒi.

Aquæ distil., ʒiii.

M. S. ʒss. three times daily.

Beef essence, beefsteak, &c.

Aug. 18.—Patient not doing so well. Stools more frequent, and of a yellowish green color. Says he cannot take the mixture. Stop it, and give

R—Quinine sulph., ʒi.

Acid sulph, aromat., ʒss.

Morph. sulph., gr. ii.

Aquæ menth. bisst., ʒiv.

M. S. ʒii. every 4th hour.

Aug. 19.—Some improvement. Continue treatment. Give also milk punch, beef essence, beefsteaks, &c.

Aug. 28.—Up to date he seems to have been improving, but to-day does not appear so well; is still quite pale and feeble. Continue treatment.

Sept. 1.—Stop the mixture, and give as follows:

R—Ferri sulph., gr. x.

Quinine sulph., gr. x.

Pulv. opii, gr. v.

Make into x pills, and give 1 three times daily.

Sept. 3.—Getting stronger, but still has some diarrhœa. Continue treatment. Beefsteaks and eggs.

Sept. 15.—Patient seems much better; is able to go about the house. Stools less frequent, yet some days will have from five to seven stools, and perhaps the next day will have but one or two. To continue treatment and diet.

Sept. 22.—Patient does not appear so well to-day, but is not confined to bed.

R—Ol. amygdal. dulcis, ʒii.

Pulv. acacæ, ʒii.

Morph. sulph., gr. iss.

Aquæ menth. pip., ʒiv.

M. S. Desert spoonful three times daily.

Sept. 27.—Up to date, has improved but little if any.

R—Pulv. opii., grs. v.

Hydrag. bi-chlor., gr. ʒ.

Cretæ prepar., ʒ i.

M. and triturate well, and divide into 10 parts.

S. One every 4 hours. Special diet.

Oct. 8.—Stop all medicines, and apply freely over epigastrium, tinc. iodine. Special diet; beef essence in small quantities.

Oct. 12.—At present taking no medicines. Has from five to seven stools daily.

Oct. 13.—Has had but three stools in the last twenty-four hours. Condition better.

The main features in this case have been the almost total want of effect of any and all the medicinal agents employed. At times he will be well enough to go about the house, and again, without any apparent cause, the diarrhœa will be so troublesome and debilitating, that he will be confined to his bed for several days. He is also quite hypochondrical. At present under no medical treatment, and with a promise of discharge he is convalescing; but in my opinion will never sufficiently recover to be of any service to the government.

Respectfully submitted,

C. T. SIMPSON, S. U. S. V."

The fecal matters are tolerably copious and watery—in which settles comminuted, undigested food. The watery portion has the color of turbid coffee. No more offensive than natural. On shaking, the liquid portion becomes frothy like a solution of soap.

Microscopic Examination.—Mingled or disseminated through the liquid and solid portions, are numerous flocs of gelatinous matter about the size of peas. These are made up of large cell cases and filaments. Held in and adhering to the gelatinous masses are numerous large globules of fatty matter. The cell cases frequently occur in large masses—attached to each other as if they had multiplied by successive segmentation. The large thin-walled and highly refractive cells in these cases (thin cell walls resemble somewhat the walls of fat cells), are colored a light greenish-yellow by transmitted light. In masses by reflected light, they are, however, more of a green. Some of them contain small oblong, spore-like looking cells, which are in some instances plainly exhibited and are beginning to develop.

In the fecal matter of this case, was found a few greenish confervoid filaments and palmelloid cells. These may have come from the water drunk, as they were not usually found in the other cases examined. Torula cells were very abundant, indicating a highly fermentative condition of the alimentary contents.

CASE IV.—*History.*—F. Grimm, private, Co. A, 54th O. V. I. Attacked with chronic diarrhœa in the early part of July last—nearly five months since—at Murfreesboro, Tenn. Had been living principally on the dry army biscuit, for some time previous. Attack preceded by constipation; attended with bloating of bowels at night. The diarrhœa commenced by one profuse passage per day, which gradually grew worse. Passages

always more numerous, and bowels more bloated during the night than day. Has had from the first, ringing in the ears, a mixed up or confused feeling in the head, and prickling numb sensations in the legs.

The patient has been gradually failing from the time of his attack to the time of his examination, Oct. 27th. Remedial agents have thus far appeared to produce no beneficial results. He is much emaciated, weak, confined to bed, hypochondrical, sallow, bloodless, eyes sunken, skin dry and scaly, and occasionally he suffers considerable pain in the stomach, bowels and chest. His stools range from five to ten per day, and are thin and watery, tolerably abundant, and of a pale ash color. They are so thin, that the comminuted, undigested food settles in them. The following description and treatment of the case has been kindly furnished by Dr. White, Surgeon in charge of West End Hospital, Cincinnati, where the patient has been since August last :

“Admitted Aug. 14, 1863. Patient has had diarrhœa for more than a month previous to admission into this hospital. At times it would be checked for a few days ; but would again come on after exposure to the weather, or imprudence in diet. No account of treatment previous to admission. Since admission has been under the following treatment :

Aug. 22.—R—Acid nitric dil., 3 i.

Aqua camphor, 3 viii.

Tinct. opii, gtt. xl.

M. S. 3 ii. every four hours.

Aug. 26.—Discontinued the above prescription, and gave as follows :

R—Quinine sulph., gr. xii.

Pulv. ipecac., gr. vi.

Pulv. opii., gr. vi.

M. Make pills, xii.

S. One every three hours.

Diet: milk, tapioca, chicken broth, &c. Continued this treatment till Aug. 30. No particular change in condition of patient. Aug. 30, discontinued above prescription, and gave instead an emulsion of sweet almonds. Diet, beef-tea, eggs, whisky toddy.

Sept. 14.—Gave R—Cupri. sulph., gr. iii.

Pulv. opii., gr. iii.

M. Make pills, xii.

S. One 1½ hours after each operation.

Did not improve on treatment. Used instead, compound capsicum pills.

Sept. 20th.—Patient about the same ; operations numbered from five to seven in 24 hours ; generally thin and watery.

Sept. 24.—R—Bismuth sub. nit., 3 i.

Pulv. camphor, gr. xii.

Pulv. opii., gr. vi.

M. Divide into parts, vi. S. One every three hours.

Oct. 13.—Resumed use of bismuth powders. Patient feels a little better. Diet continued.

R—Ferri citrate, 3 i.

Vini albi, 3 iv.

M. S. Tablespoonful three times a day.

Oct. 22.—Passages continue about the same ; generally thin. Occasionally his pasages have some consistence. To-day discontinued all treatment. Applied turpentine stupes on abdomen. Diet, poached eggs for breakfast ; tapioca, or farina soup, milk, &c., for other meals.

Oct. 23.—Suffered a good deal of pain last night.

R—Ol. teribinth, 3 i.

Syrnp simp., 3 i.

Aqua, 3 i.

M. S. A teaspoonful three times a day.

R—Pulv. opii., gr. xv.

Make pills, xv. S. One every two hours.

Oct. 25. Continued turpentine. Increased opium to gr. iss. every two hours. Patient is weaker than he was two weeks ago. Appetite not so good. Strength failing."

I have introduced the foregoing detailed progress and treatment of the two cases at West End Hospital, as samples of the usual mode of treating the disease—the surgeon feeling his way along from day to day—and to show the either little, uncertain, unsatisfactory, or no response obtained from the remedies used.

Microscopic Examination.—The fecal matter is filled with small jelly masses, which contain an abundance of the large faintly greenish-yellow cell cases; some empty and some filled with cells.

Torrula cells are numerous; also the spherical spores of a species of penicillium. Peculiar polyhedral cells, which are highly refractive, occur in masses, each cell of which contains a crystal of sugar, which is an oblique prism.

CASE V.—*History.*—Isaac M. Priest, corporal, Co. H, 19th O. V. I. This patient came from Chattanooga, arriving at Washington Park Hospital, Cincinnati, Oct. 24, 1863. Was first taken with chronic diarrhœa, according to his own statement, in June last, at Murfreesboro. The chronic diarrhœa was preceded by constipation and flatulence, which lasted several weeks. Was living principally on army biscuit and coffee at the time. The constipation was followed by a diarrhœa, which gradually increased in severity. The passages came on mostly during the night and morning. They were preceded and accompanied by the development, eructation and passage of wind.

In the month of July typhoid fever set in; recovered from this about the 20th of August: the chronic diarrhœa, however, still continued. The patient is now (Oct. 25) emaciated, weak, and confined entirely to bed; cannot raise himself up alone; feces pass involuntarily in bed; no control over sphincters; paralyzed. Passages thin, rather watery and small. Food passes mostly undigested. The stools contain a large amount of fatty matter, in large globules, from which acicular crystals of stearine radiate, giving them the appearance of ciliated animalcular bodies. Patient looks pale, bloodless, yellow and haggard. Eyes sunken and skin dry and feverish. Hypochondrical and has no hopes of recovery. Urine scanty and filled with lithates and oxalates. Is very low; will not survive long.

This is a well marked case of chronic diarrhœa, resembling all of those cases which accompany or follow typhoid fever.

Microscopic Examination.—The fecal matters are filled with flocs and masses of pale, greenish, gelatinous (colloid) matter, like jelly. These contained in abundance the large cell cases and filaments before described. Torrula cells existed in large numbers. There were also many confervoid filaments, and the peculiar, highly refractive polyhedral cells, each containing a crystal of sugar. Casts of the tubular glands of the colon and rectum were abundant. They resembled small masses of honey-comb.

There were also various sized spherical bodies, some very large and others smaller, which had the appearance of being ciliated animalcular

organisms, and which supposed at first they were; but which were soon found to be oil globules, from which radiated in every direction acicular crystals of stearine. These crystals bore a marked resemblance to ciliae. Similar masses and globules of fatty matter, minus the ciliated, radiating needles, are abundant in the fecal discharges of nearly all cases of genuine chronic diarrhoea. Smaller globules of this character are particularly abundant.

October 29.—At 7 A. M., this patient died. Before death, there was an exudation—or what was taken for one—lining the pharynx and fauces, and dipping down into the larynx. The microscope demonstrated this apparent exudation to be merely a layer of *torrula* cells developing with great rapidity and in incalculable numbers in the saccharine mucus secretions. They were found to have gradually crept off the œsophagus from the stomach, into the fauces, where they dipped down into the larynx. This is of frequent occurrence in the last stages of the disease, and is a sure sign of approaching death.

Post-mortem.—Oct. 30, 10 A. M.—27 hours after death. Weather cold, and body well preserved. On laying open the larynx and trachea, found the mucus membrane of the larynx, and that of about half an inch of the upper portion of the trachea, covered in patches with what appeared to be exudation, about one line in thickness. This was loose and readily detached from the mucus surface. A portion was removed for microscopic examination. At 11 A. M., one hour after its removal, examined it with the microscope. Found it composed of a mass of *torrula* cells, held together by the vegetating spores and mycelium of another species of fungus, which resembled a *pennicellium*. The exudation was rich in sugar and acid, and was really a vegetation exciting fermentative changes in glycogenic and saccharine secretions.*

Liver.—The liver was slightly more yellow than normal; otherwise apparently healthy.

Spleen.—The spleen was somewhat enlarged, and filled with red fluid blood, and softened.

Stomach.—The stomach was enlarged, walls thickened, and empty with the exception of a thin layer of greasy pultaceous matter, closely adherent to its internal surface. On removing this, the follicles and villi were found enlarged, and elevated above the surface about half a line, presenting the appearance of little fungoid excrescences from one to two lines in diameter, and spreading above and constricted below. These were easily torn off, leaving ragged edged depressions, resembling the bed of ulcers. The portion of the stomach not occupied by these was of a red beef color.

Small Intestines.—The small intestines were distended with wind, and coated inside with a thin adherent layer of dirty yellow pultaceous matter, that had a highly offensive and fermentative odor. This was filled with *torrula* cells, actively developing, and multitudes of the vegetating spores of a species of *pennicellium*. On removing this layer, the intestinal coat was found in a tolerably healthy condition, save in small streaks and patches, which had a beef red color. Walls not thickened.

Large Intestines.—These were coated inside with a thin layer of ad-

*This exudation in the fauces is frequently noticed in the late stages of chronic diarrhoea, and is strongly indicative of the presence of a highly glycogenic or saccharine and fermentative condition of the system, and especially of the epithelium of the alimentary and pulmonary membranes.

herent yellow pultaceous matter, slimy and gelatinous, and filled with torrela cells and the spores, developing filaments of the same species of pennicellium found developing in the small intestines, stomach and fauces. This matter had a very offensive, fermentative odor, and was filled with minute bubbles of air. On removing this, the whole length of the large intestines, up to the coecal valve and about one inch above it, was found very much thickened, and the internal membrane completely studded with ragged patches, or fungoid elevations, from one to two lines in diameter, and elevated above the surface from one-fourth to one-half a line. The patches were wider above and constricted below, and consisted of the enlarged follicles and villi, and infiltrated connective tissue. On tearing these off, a ragged edged red depression, like that of an ulcer, presented itself under each; sometimes several were connected. The portion of the surface not occupied with these was of a beef red color.

Mesenteric Glands.—The mesenteric glands of the small intestines appeared somewhat enlarged, but were otherwise normal. The mesenteric glands of the large intestines were highly congested and very much enlarged and red.

Omentum.—The omentum was perfectly free from fat, and highly congested.

The lungs and heart were not examined.

In the little masses of gelatinous (colloid) matters in the intestines, were the numerous large *cell-cases*—both filled and empty—that occurred so abundantly in the previous cases, and which are uniformly present in this disease.

These cells and the gelatinous masses are not unlike the gelatinous matters and so-called cells that occur sometimes in the urinary organs, in certain chronic forms of pyelitis, cystitis, &c., where the bladder and kidneys are involved, and the mucus membrane of the former becomes studded with fungoid elevations like those in the large intestines of chronic diarrhœa. This matter also resembles closely the so-called gelatinous (colloid) matter that is developed in the thyroid gland, in the disease known as goitre, or bronchocele.

In the discharges of chronic diarrhœa, these colloid cells occur in great numbers, and often many connected together. They appear to develop or multiply not unlike low algaoid forms. The fact that they tend to turn green under the influence of sunlight, is further evidence in this direction.

CASE VI.—History.—John Rattepat, private, 99th O. V. I., German. He states that he has been sick one year and three months with chronic diarrhœa. Was attacked near Nashville. Came to Washington Park Hospital, Cincinnati, October 9, 1863. He is pale, weak, and very much emaciated. Skin dry and hugs the bones. He is hypochondrical—nothing going well with him; is very feeble. Passages small, and ranging from one to six per day. The little hard masses that lie in his rectum, when he has but one passage per day, are covered with slime, and free from the gelatinous lumps peculiar to the fecal matter when his bowels move several times daily. Urine loaded with oxalate of lime crystals.

Microscopic Examination.—When his stools are frequent and thin, they are filled with the large (colloid) cell cases, and filaments developed from them. Stools pale ash color, and contain considerable undigested food. Urine small, and loaded with lithates and oxalate of lime. Is troubled with much flatus at night. Feces filled with torrela cells. They also contain many confervoid filaments. Has had a cough nights most of time since the attack, with a constricted feeling in chest, and palpitation of

heart. Legs often get numb and asleep. Ears ring at night, and head feels mixed up and numb frequently.

CASE VII.—*History and Treatment*—Emanuel Wolf, private Company D, Pennsylvania Artillery, was first attacked with chronic diarrhea below Vicksburg, at Millikin's Bend, in May, 1863; diarrhea preceded by constiveness of some days standing. Before it commenced, remembers to have been troubled with wind in bowels. The passages gradually increased in number daily till the disease reduced him very low. Remained below till recently. Came North and entered Seminary Hospital, Covington, Ky., Oct. 9, 1863. Was lying in camp, hardly able to drag himself about till he came to Covington. He has been troubled much with flatulence, especially evenings and nights. Legs are apt to "get asleep;" has night and morning coughs, with some expectoration of sweetish mucous, and palpitation of heart. Saw him on Oct. 29th; appeared to be slowly improving since he came into Seminary Hospital. He is attended by Acting Assistant Surgeon J. T. Wise, who has, as a daily medicine, given him the following:

R.—Misturæ cretæ, ʒiii.

Tinc. catechu, ʒiss.

Tinc. opii, ʒss.

M. S. A teaspoonful every four hours.

When the liver is not sufficiently active, he has given in addition—

R.—Mass. Hydrarg., gr. ix.

Pulv. opii, gr. vi.

Tannin, gr. xii.

M. Make pills vi. S. one every six hours.

Diet—Milk and bread for breakfast, and rich chicken soup for dinner.

Under this treatment the patient has been gradually gaining. His passages are, however, still thin (Oct. 29th), and full of peculiar cells (colloid), and he is still weak, though slowly improving.

Microscopic Examination.—Stools of a pale ash color, and filled with little masses of jelly-like substance (colloid), which contain an abundance of large cell cases and filaments, mentioned in the previous cases. So thin are the stools, that the particles of undigested food settle to the bottom of the vessel. *Torrula* cells are numerous. There are many confervoid filaments, and highly refractive polyhedral cells in masses, each of which contains a crystal of sugar. Masses of the casts of the tubular glands of the large intestines are abundant in feces. They resemble in shape the honey-comb.

There is a highly fermentative condition in the alimentary canal, generating large quantities of gaseous products during the evening and night, and producing frequent passages. Yeast (*torrula*) cells are developed in multitudes. The food taken through the day commences to ferment actively by evening, and continues to do so till all is evacuated. This fermentative process distends the bowels, and acts as an irritant and cathartic.

CASE VIII.—*History*—Thomas Franklin, Company I, 65th Ind. Infantry, was attacked in April, 1863, in the vicinity of Murfreesboro', with chronic diarrhea. Has been laboring under the disease from that time to the present. He entered Seminary Hospital October 10, 1863; was much emaciated and weak. Dr. Wise attended to this patient, and followed the same treatment as in the previous case. Has been gradually improving. Is able now to walk outside, and is gaining in flesh. His stools are, however, still frequent, thin, and of a pale ash color, the comminuted food passing partially undigested.

Microscopic Examination.—Examined feces Oct. 29th. They were thin, watery and pale, and contained numerous masses and ropes of gelatinous (colloid) matter, of a greenish-yellow color. In these were numerous (colloid) cells, confervoid filaments, and a multitude of *torrula cells*, the latter indicating active alimentary fermentation, and explaining the origin of the flatus, which nightly distends the stomach and bowels.

CASE IX.—*History and Treatment*—J. P. Titcomb, Company A, 11th N. H. Vol. Infantry entered Main street Hospital, Covington, July 7th, 1863, where he now is. Has had chronic diarrhea fourteen months. His stools average about four per day at present, and are beginning to have a little consistence. They are still, however, of an ash color, and somewhat ropy. Fragments of food pass undigested. The history of the attack and the progress of the disease is very much like the cases described.

The treatment followed in this case was kindly furnished by the surgeon in charge, Dr. Speer :

“When admitted into Main street Hospital, July 7th, 1863, he commenced taking the following :

R.—Aque camphor, 3iv.

Acid sulph., dil., 3ii.

Tinc. opii, 3i.

M. S. Tablespoonfull every three hours.

This was continued for three weeks, and then he commenced taking—

R.—Liquor potass, arsenitis, gtt., v.

three times a day, which has been continued up to the present time, Nov. 2. Has been slowly improving. For the last three months he has been able to go about. Has now, on an average four stools a day.”

Microscopic Examination.—Examined feces Nov. 2. The masses of gelatinous (colloid) matter are abundant in the stools. They are filled with the large colloid cells and filaments; also a multitude of *torrula cells*, and many confervoid filaments. Numerous masses resembling honey-comb, and consisting of casts of the tubular glandules of the large intestines, were scattered through the feces.

CASE X.—*History and Treatment*—Wm. M. Courser, Company D, 11th N. H. Vol. Infantry, entered Main Street Hospital, Aug. 23, 1863. Attacked with chronic diarrhea the 1st of June last. Feces thin, pale ash color, and rather plastic and ropy. Considerable comminuted food passes undigested. The early history of the case is similar to the preceding one.

The following treatment, furnished by the surgeon in charge, Dr. Speer, has been closely followed since the patient entered Main Street Hospital :

“R.—Ferri per. sulph., 6i.

Piperine, gr. 10.

Pulv. opii, gr. x.

M. Make pills x. S. One every three hours.

This prescription was used up to Oct. 1st. Since then he has been taking the following :

R.—Argent. Nit. gr. iii.

Ext. nux vom., gr. xxii.

Ext. hyos., gr. xii.

M. Pills No. xii. S. One morning and night.

He is improving under this treatment.”

Microscopic Examination.—Feces examined Nov. 2. Pale ash color, quite thin, and filled with the peculiar masses of gelatinous (colloid) matter, in which were large colloid cells and filaments, and multitudes of *torrula cells*. There were also present many confervoid filaments.

DENNISON U. S. A. GENERAL HOSPITAL.

After completing the examinations and experiments in the hospitals of Washington, Tennessee, and Kentucky, I repaired to Dennison U. S. A. General Hospital. Here through the kindness of Dr. King, Medical Director of the Department of the Ohio, and Dr. Carpenter, Medical Director of the District of Ohio, and Dr. Cloak, surgeon in charge of Dennison Hospital, I had every facility extended to me at this point, for carrying on microscopic researches connected with the cause, &c., of the disease. They also, with their characteristic kindness and zeal for the advancement of medical knowledge, placed at my disposal a ward, into which the marked cases of the disease were placed for the special treatment and diet indicated by the previous microscopic examinations, observations, and experiments.

I passed through the wards of the hospital as rapidly as possible, examining, microscopically, the stools of those who had labored long under the disease, and from them selected twenty of the most aggravated cases, which had resisted the ordinary treatment, and on Nov. 17 transferred them to ward 30, which had been previously vacated and cleaned for the purpose.

Here they were put on an *albuminous diet*, and remedial agents, as indicated farther on, under the head of *Treatment and Diet*. Act. Assist. Surgeon C. D. Palmer, very kindly took charge of this ward, and entered with interest and zeal upon the work of following out the new plan of diet and treatment. To him am I indebted for faithfully carrying out the plan of treatment. His report will appear farther on.

As patients daily came into the hospital from Nashville and other points below, the number of chronic diarrhœa patients were increased till all the beds (40) were full.

The following are brief histories of the cases with microscopic examinations of the stools, etc:

CASE XI.—*History*.—Andrew Van Buren, Co. I, 90th O. V. I., attacked with chronic diarrhœa, followed by intermittant fever, at Murfresboro, about the middle of May, 1863. He was at first constipated for several weeks, during which time he was living largely on army biscuit. Before the diarrhœa commenced, he remembers that he was disturbed nights with a rumbling of wind in his bowels. This was followed by looseness, which gradually increased from one profuse passage per day to twenty or more. Has been troubled much with the development of gases in stomach and intestines during nights. Has now three and four passages per day. Had twenty passages per day up to about three weeks ago. Stools now begin to look quite healthy; saw masses of whitish pus streaked with blood, adhering to the feces. There is considerable ulceration in the rectum.

Microscopic Examination.—The feces contain, besides pus, numerous gelatinous (colloid) masses filled with colloid cells and filaments. The torrula cells were present, but only in moderate quantity. Fermentation at present not active; the principal trouble being ulceration of the rectum, and symptoms of tuberculosis. He has been taking for a few weeks back the following:

R—Nit. acid dil. gtt. 16.

Aqua camph. 3i.

Syrup morph. 3i.

M. S. Tablespoonful every two or three hours.

CASE XII.—History.—James Maxwell, Co. K, 2d O. V. I. Attacked March 15, 1863, with bilious remittant fever, at Murfresboro. Soon after diarrhœa set in, preceding which was constipation. The number of stools increased gradually, from day to day, till he had about twenty in twenty-four hours. Has now, on an average, about five stools daily. They are thin and of a pale ash color, and tinged with blood. Some ulceration of colon in this case. Has but little wind developed in bowels at present.

Microscopic Examination.—Mixed through the stools were numerous little masses of gelatinous (colloid) matter, containing colloid cells. There were also torrula cells in moderate numbers and many confervoid filaments. Patient pale, weak and anæmic, eyes sunken. Many pus cells in feces. Able to sit up most of time. Appetite good. In this case, the Surgeon states that he has been able to produce no improvement for some time.

CASE XIII.—History.—Theodore W. Fisher, 1st Sergt. Co. H, 36th Mass. V. I. Was attacked with chronic diarrhœa back of Vicksburg, in July last. This was soon followed by an attack of bilious remittant fever. Soon after diarrhœa commenced, had from ten to fifteen passages daily. Has now about five. Is in very good flesh, but is pale and weak. Is troubled with legs getting asleep, and a thick, mixed-up numb feeling in head. Has heavy throbbing pains in lower intestines. Urine small, and loaded with lithates and oxalates. Has constant pain in back. Is hypochondriacal and languid. Surgeon in charge of this case says he is unable to do the patient any good.

Microscopic Examination.—Feces soft and ropy and quite normal in color. Contain numerous small jelly or gelatinous (colloid) masses filled with colloid cells. Flatulence slight and torrula cells but few. Formerly he bloated much at night, but this has now pretty much ceased. This patient is rather laboring under the sequelæ of chronic diarrhœa than under the disease itself.

CASE XIV.—History.—Joshua Wiseman, Co. D. 97th O. V. I. Has had chronic diarrhœa over one year. Now improving. Has, on an average, about four passages daily. Feces begin to assume a normal consistence and color. But little flatulence and abdominal pain. Stools contain still small masses of gelatinous (colloid) matter, filled with colloid cells and filaments. There are a few confervoid filaments and torrula cells. The irritation about chest and the paralytic symptoms have mostly disappeared.

CASE XV.—History.—James Lyon, private Co. E. 45th O. V. I. Age 45. Has had chronic diarrhœa over one year. Alimentary canal in a bad condition, yet is able to walk about. Feces rather dark, and mixed with gelatinous matter and blood; thin, watery and offensive. Bowels and stomach distended much with wind, during the evening and night. Has sour eructations and passes much wind with feces. Stools mostly during night, and range from five to eight daily. Extremities get asleep and feel numb. Head feels numb and mixed up; ringing in ears at night, and a blur before the eyes; with frequent flashes of light. Naturally a strong, robust man. Has some oppression about the chest, with night and morning cough, which is at times dry and often loose. Some palpitation of heart, and pain and uneasiness in epigastrium. Has constantly a dull pain through the abdomen, with a "numb feeling." In colon and rectum has heat and throbbing, with dull pain. Eyes sunken and dark underneath; appetite good, but feels constantly oppressed.

Microscopic Examination.—Stools thin and dark, with gelatinous (col-

loid) matter mixed all through them, rendering them ropy. They contain multitudes of *torrula cells*, and a species of *saracina* (wool-sack plant). The cells are smaller and more highly pearly than in the *ventriculi*, and occur either single, in twos or in fours. Seldom more than two and never more than four together. Increase by segmentation. The fecal matter contains multitudes of *colloid cells and filaments*. They also contain large masses or rather layers of highly refractive polyhedral cells, each one of which contains a crystal (Hexagonal or four-sided prism or an octohedron). These are very abundant. They are seen in all stages of formation. Equally abundant are the highly refractive honey comb casts of the tubular glandules of the large intestines. These are arranged with great regularity in a single layer, like the cells of honey-comb, are highly refractive and have an internal cavity, containing minute pearly granules or cells. The peculiar cells, each one of which contains a crystal of sugar, appear to all be derived from the cells in the colloid cases.

Peculiar confervoid filaments are also present.

This is a very interesting and well marked case of chronic diarrhœa of long standing.

CASE XVI.—*History*.—B. Myers, Co. C., 57th O. V. I., aged 21. Was taken with chronic diarrhœa in May, 1863, seven months ago. Diarrhœa preceded by constipation, accompanied by flatulence during night. After the diarrhœa commenced, it gradually increased from one passage a day up to twelve and fifteen. These were mostly during the night, and were preceded and accompanied by the generation and passage of much wind. Passages reduced now to from four to eight per day, thin, pale and tolerably large. Bowels and stomach distended with flatus during evening and night, accompanied by sour eructations. Great tenderness and dull pain in epigastrium. Has a prickling feeling in legs, which are apt to "get asleep." Eye sight impaired, ears ring at night, head numb and "mixed up." Passed some blood, from bladder, about two weeks since. Urine small, and loaded with lithates and oxalates.

Microscopic Examination.—Feces quite normal in color, but thin. Contain many *torrula cells* and little masses of gelatinous (colloid) matter, like jelly. These are filled with colloid cells and filaments. A few confervoid filaments are present.

CASE XVII.—*History*.—Daniel W. Howe, Co. K, 9th N. H. I. Attacked in June last with chronic diarrhœa. Has been laid up in hospital with it to present time. Has now from five to six passages daily. Soreness and pain in epigastrium and lower bowels. Troubled much with flatus at night. He is gradually improving in strength and flesh, at present. Countenance florid, and eyes bright.

Microscopic Examination.—Feces contain a few small masses of gelatinous (colloid) matter. A multitude of *torrula cells* and confervoid filaments are present. Highly fermentative condition in alimentary canal.

CASE XVIII.—*History*.—John Craig, Co. C., 54th O. V. I., private. Has had chronic diarrhœa, since March last—eight months. Has now from seven to eight passages daily. Attacked near Vicksburg, after living almost exclusively, for some time, on army biscuit. At first his bowels were constipated and flatulent. Has now a severe pain below the umbilicus, with tenderness and some pain and tenderness in epigastrium. Pain in bladder, testicles and kidneys. Urine small, and deposits, on standing, a large quantity of lithates and oxalates. Considerable wind generated in stomach and bowels at night, with sour eructations. Soreness along the œsophagus after eating. Legs prickle and frequently "get asleep." Head feels numb and "mixed up." Ears ring at night. Some cough dur-

ing evening, night and morning, with frequently a constricted feeling in chest, and palpitation of heart.

Microscopic Examination.—Feces thin but quite natural in color. Contain a multitude of torrula cells, and a few cenfervoid filaments. No gelatinous (colloid) masses can be detected with the unaided eye; the microscope reveals, however, a few colloid cells.

CASE XIX.—*History.*—Geo. H. Osborne, Co. E, 2d U. S. Artillery. Was attacked with chronic diarrhœa in August last, at Vicksburg. It was preceded a few days by an attack of bilious remittant fever. Still under the influence of both diseases. There is much oppression about the chest. Breathing short. Walks stooped over, and is very hypochondriacal. Thinks he will never recover till he returns home. Very weak, pale and anemic. Scarcely able to walk the length of the ward. Has considerable appetite, but has to control it. But little paralytic tendency; no flatulence.

Microscopic Examination.—Feces quite natural in color, and of moderate consistence. Contain but few jelly masses, and but few colloid cells. There are a few cenfervoid filaments, and cells resembling torrula cells, but much larger, and which increase by segmentation.

The principal difficulty with this patient now seems to be in his lungs and heart. His stomach is, however, irritable, and frequently ejects its contents. He is pale, feeble and considerably emaciated.

CASE XX.—*History.*—Andrew Holeman, Co. G, 29th O. V. I. Was attacked on the 16th of August last, at Kelley's Ford, with chronic diarrhœa. Was living on hard crackers and side pork at the time. Remembers that his bowels were constipated previous to the attack of diarrhœa. Passages at first but once a day, and profuse, generally occurring from three to five o'clock in the morning. They were preceded by the generation of gases in the stomach and bowels, with rumbling, eructations and passages of wind. Has now from five to six passages per day; much bloated with wind at night. Passages mostly during the latter part of the night and early in the morning. Is now slowly improving; in tolerable flesh, but is weak. Muscles soft. Stools natural in color, but rather thin, and have the peculiar odor of chronic diarrhœa passages.

Microscopic Examination.—Stools moderately filled with torrula cells, and contain a few of the little jelly-like masses of colloid matter, filled with colloid cells. Cenfervoid filaments are abundant. This patient appears to be doing very well, and is in a fair way to recover.

CASE XXI.—*History.*—Gayton W. Fuller, Private Co. B, 11th N. H. I. Attacked about the middle of June last, with chronic diarrhœa, at Vicksburg. Was living on army biscuit at the time, with salt pork and fresh beef. Food mostly army biscuit. Does not remember whether his bowels were constipated previous to the diarrhœa. Passages now three per day, of a dark brown color, with a dirty, black-greenish shade, and contain small masses of greenish, gelatinous, (colloid,) ropy matter.

Microscopic Examination.—Torrula cells occur only in moderate quantity, which accounts for the little flatulence lately. There are many of the little jelly (colloid) masses, which contain many colloid cells. This patient appears to be slowly improving in health and strength.

CASE XXII.—*History.*—Edward Obernouf, private Co. D, 61st O. V. I. Attacked with chronic diarrhœa in August last, at Callet's Station. Was living mainly on army biscuit, with a little beef at the time. Frequently lived for days upon army crackers. Has been troubled greatly with flatulence during evenings and nights, which generally continued till the food eaten the previous day was pretty thoroughly evacuated. This patient

has now from six to eight passages per day. Troubled much with the development of intestinal gases, with sour eructations during evening and night. Tender over stomach, transverse and descending colon. Pale, weak and emaciated. Legs prickle and are apt to "get asleep." Head feels mixed up and numb. Some night and morning cough and palpitation of heart. Ears ring at night. Patient able to walk about the ward.

Microscopic Examination.—Feces thin, and of a light yellowish, ash color, filled with gelatinous (colloid) masses, about the size of a pea. These contain numerous colloid cells. Torrula cells very abundant. There are also many confervoid filaments. The large cells, resembling overgrown torrula cells, are occasionally met with.

CASE XXIII.—*History.*—Henry Reese, private Co. D, 4th O. V. I. Has had chronic diarrhœa for sixteen months. Has had a constant pain in the stomach. Is now getting quite fleshy, and has a fresh countenance, but is much bloated, and has constant pain in stomach, and sour eructations, evenings and nights especially. Has palpitation of heart, and some oppression about chest, with night and morning cough. Feces quite dark and thin. They contain some slimy and gelatinous (colloid) matter.

Microscopic Examination.—The gelatinous (colloid) mosses contain numerous colloid cells and filaments. Torrula cells are numerous and confervoid filaments are frequently met with.

CASE XXIV.—*History.*—Joseph Cox, private Co. C, 36th O. V. I. Attacked the 10th of last June, at Murfreesboro, with chronic diarrhœa. Was in hospital at Nashville till the 8th of September, when he was transferred to Camp Dennison hospital. Passages were at first thin and watery, and at length became gelatinous and ropy. Diarrhœa, preceded by constipation. Has been troubled, especially evenings and nights, with much bloating, and eructations and passages of wind. His stomach and bowels are now constantly distended, but are more so during night than day. Has from four to five passages per day. These are mostly during the latter part of night and early in the morning. Stools filled with little masses and ropes of gelatinous matter. Body bloated and of a rosy red color, having the appearance of being a hard drinker. Considerable soft adipose. Muscles soft and flabby. Eyes dark underneath, and conjunctiva red. Since coming to Camp Dennison he has been under the charge of Acting Assistant Surgeon Palmer, who has given him the following:

R—Liқ. Potass. Arsenitis, ʒi.

Syrup Morph., ʒii.

M. S., one dram 3 times a day.

This prescription was taken for 4 weeks. It was then suspended, and the following R given:

R—Aqua Camphor, ʒii.

Syrup Morph., ʒii.

Acid, Nit. dil., gtt. xxxii.

M. S., ʒi every 3 hours.

This was given for three weeks, and then the first prescription again resumed. Under this treatment the patient has been slowly improving.

Microscopic Examination.—Feces are gelatinous and of a greenish yellow cast. This gelatinous (colloid) matter is filled with colloid cells. Torrula cells occur in multitudes. Confervoid filaments are numerous. The masses of highly refractive polyhedral cells, each containing a crystal of sugar, were frequently met with. Casts of the tubular glands of the large intestines were abundant.

CASE XXV.—*History.*—Wm. Young, private Co. 46, 1st Battalion, Invalid Corps. Attacked with chronic diarrhœa in February, 1863, at Murfrees-

boro, Tenn. Passed blood and slime for the first two weeks; it starting off with dysenteric symptoms; and finally passed into chronic diarrhœa. Had at first from 7 to 10 passages per day. Had considerable pain before and after stools. After the dysenteric symptoms subsided, there was considerable bloating of the stomach and bowels, especially evenings and nights, with eructations and passages of wind. Has had from the first pain in the small of the back and down the legs; also coughs nights, with eructations and passages of wind, and with expectoration of a thick sweetish mucus; pain in region of heart and epigastrium; constricted feeling in chest, especially mornings. Trip-hammer beating of heart, indicating fibrinous depositions. A paralytic tendency has manifested itself in a numb, mixed-up feeling in the head, ringing in the ears, prickling sensations in extremities, legs apt to "get asleep," etc.

Microscopic Examination.—Feces filled with torrula cells. The gelatinous (colloid) masses are abundant, and filled with colloid cells. Casts also of the tubular glandules of the large intestines occur frequently in honeycomb masses.

CASE XXVI.—*History.*—Joseph Bumham, Co. B, 6th O. V. I. Attacked with chronic diarrhœa, on the Potomac, July, 1862. Has had the disease from that time to the present. Passages have ranged much of the time from 10 to 30 per day. He is now much better. Stools average about 5 daily. Considerable flatulence, especially at night. Passages mostly during the latter part of night and early in the morning. The patient is now slowly improving, and is able to move about outside and exercise in the open air.

Microscopic Examination.—This is an interesting case, both on account of its long standing and the peculiar condition of the alimentary canal. It resembles closely Case XV in many respects. The stools contain large quantities of gelatinous (colloid) matter, in which are numerous bodies, which I have called colloid cells. Torrula cells are abundant. Confervoid filaments are frequently met with.

CASE XXVII.—*History.*—David R. P. Little, private Co. F, 4th O. V. I. Attacked with chronic diarrhœa in front of Richmond, in July, 1862. Passages from 4 to 12 per day. Has been troubled much with flatulence, especially evenings and nights. In June, 1863, began to swell in the region of the stomach. The swelling has now extended over the whole abdomen. It still troubled much with flatus during the evening and night, with sour eructations and passages of wind, which appears to operate upon the bowels as an irritant and cathartic. Considerable oppression about the chest, breathing short, with cough nights and on rising in the morning, expectorating a thick, sweetish mucus. Palpitation of heart, with trip-hammer pulsation, indicating thrombosis. Paralytic tendencies are manifested, in prickling, numb sensations in extremities, a mixed-up, numb, confused feeling in the head, with ringing in ears at night. Feces thin and of a dark color.

Remembers to have been constipated previous to the diarrhœa. Was living principally upon army biscuit at the time, not having facilities for cooking, on account of being in almost constant motion.

Microscopic Examination.—Feces soft and dark colored, coloring matter—colloid—(jelly) communicating to them a dirty, greenish dark color and a ropy character. The jelly, or gelatinous matter, is filled with colloid cells. Torrula cells are abundant. Confervoid filaments are frequently met with.

CASE XXVIII.—*History.*—Samuel H. Baker, private Co. F, 96th O. V. I.

Attacked with chronic diarrhœa on Yazoo River December 27th, 1862. Previous to attack had been for some time on the March, and had to subsist frequently entirely upon army biscuit, not being able to carry cooking utensils. This diet always at first produced constipation. Was constipated previous to diarrhœa, during which remembers to have been troubled much with flatulence at night. This was succeeded by a single profuse passage daily, which occurred towards morning, and was preceded and accompanied by much wind. Stools increased until he had as many as twenty per day. From time of attack to present—Nov. 16—has been constantly under the influence of disease. Recently has been slowly improving. Has now on an average about six passages daily. Very flatulent. Bowels constantly distended, with pain across umbilical region. Worse nights than days. Pains and numb and prickling sensations in legs. Legs frequently “get asleep.” Head feels numb and “mixed up.” Ears ring at night. Sees frequently flashes of light. Paralytic tendency in lower bowels and sphincter. Difficulty often to retain feces. Constricted sensation in chest, with frequently somewhat labored breathing, or breathing that does not seem to satisfy. Night and morning cough, with expectoration of thick, cream-colored, sweetish mucus. Palpitation of heart, with trip-hammer pulsation, indicating thrombosis, or fibrinous depositions within its cavities.

Microscopic Examination.—Feces thin, and contain numerous small masses and ropes of gelatinous (colloid) matter of a yellowish green color, which gives them the appearance of containing bile. Torula cells occur in multitudes. There are also many confervoid filaments.

CASE XXIX. *History.*—Ebenezer Thayre, Private, Co. I, Conn. V. I. Has had diarrhœa for over one year. Was first attacked at Annapolis, Md. At first had but one profuse passage daily, this occurring in latter part of night, and preceded with great distention of stomach and bowels, with wind. Gradually increased from day to day till he had from 8 to 10 passages daily. Has considerable cough and expectoration, especially at night, with painful bloating with wind. From this attack he so far recovered as to return to duty. Was attacked with Typhoid fever at Snyder's Bluff, Miss., August 5, 1863, which aggravated the diarrhœa; and since which it has been very bad. With it, has had also intermittent fever, which he has not got rid of entirely. Is pale, anæmic and weak, but still able to walk about. Stools pale ash color, and from 6 to 10 per day. Has prickling and numb sensations in extremities, a mixed up numb feeling in head, and some uneasiness about the heart. Has some night and morning cough with expectoration of sweetish mucus. This patient had a very fine constitution.

Microscopic Examination.—Feces thin, pale ash color, and filled with globules of fat, covered with a crust, from which radiates in all directions, acicular crystals, resembling ciliæ. These bodies resemble animalculæ forms. I have found them in the feces of all cases of chronic diarrhœa which have been preceded or accompanied by typhoid fever. The sarcina ventriculi occur in vast multitudes, in wool-sack masses. Torula cells are abundant. Scattered through the stools are numerous masses of light-colored gelatinous (colloid) matter, in which are numerous colloid cells. The urine is scanty and loaded with lithic acid and oxalate of lime.

CASE XXX. *History.*—Wm. Baker, Private, Co. E, 7th O. V. I. Attacked with chronic diarrhœa about the 1st of August, 1863, on the Rappahannock. Has had the disease constantly since. Has had intermittent fever off and on since May last. Was not prevented from field duty till diarrhœa set in. Has now from 3 to 6 passages per day, these occurring

mostly during night. They are preceded by much bloating of stomach and bowels.

Microscopic Examination.—Feces thin and quite normal in color. Contain many small masses of gelatinous (colloid) matter. Torrula cells are abundant, and confervoid filaments are frequently met with.

CASE XXXI. *History.*—A. S. Bean, Private, Co. E, 9th N. H. V. I. Attacked with chronic diarrhœa the last of July, 1863, back of Vicksburg. Soon after the diarrhœa commenced, was taken down with Intermittent fever. Whenever the diarrhœa is checked with astringents, the chills are liable to come on. Has now from two to four passages per day, mostly at night or towards morning. They are preceded by disagreeable distension of the stomach and intestines with wind. Sour eructations. Has some oppression in breathing, with tickling in bronchiæ and cough during night and morning. Palpitation of heart. Legs prickle frequently and are apt to "get asleep." Head feels "mixed up" and sometimes numb. Ears ring at night.

Microscopic Examination.—Feces rather pale and thin; tolerably copious. Filled with small masses and ropes of gelatinous (colloid) matter; filled with colloid cells. Torrula cells are abundant, and confervoid filaments are frequently met with.

CASE XXXII. *History.*—Samuel A. McKinney, Private, Co. B, 50th Penn. I.; age 19. Attacked with chronic diarrhœa, in the rear of Vicksburg, in June, 1863. Has now (November) from 2 to 6 passages per day. Has been gradually improving for last two months. Has been and still is troubled with much flatulence during evening and night, followed by passages from bowels, which relieves the flatulence. Has some constriction, pain and tickling in chest, with cough and expectoration during night and morning. For the last three weeks has not been troubled as much with flatus as formerly.

Microscopic Examination.—Feces quite normal in color, but thin, and contain small jelly masses of gelatinous (colloid) matter, in which are numerous colloid cells. Torrula cells moderately abundant. There are also a few confervoid filaments. There are frequently found casts of the tubular glands of the large intestines, and the peculiar cells, each of which contains a crystal of sugar. Urine scanty and loaded with lithates and crystals of oxalate of lime.

CASE XXXIII. *History.*—Carl L. Vogt, Private, Co. G, 4th U. S. Artillery. Has had chronic diarrhœa about 9½ months. Was attacked at Fredericksburg, Va. First symptoms, severe pain in lower part of bowels, followed by passages of blood and mucus. Dysentery lasted about 10 days. Followed by a painless diarrhœa. The food eaten, would pass a few minutes after, undigested. Passages thin, watery, and quite profuse. Was troubled with a rolling and tumultuous motion in bowels, and with eructations and passages of wind. This occurred principally at night. Stools pale ash color. Paralytic symptoms show themselves in lower bowels; legs are apt to "get asleep;" head feels numb and "mixed up," and there is ringing in ears at night. Considerable constriction about the chest, with night and morning cough and expectoration of a thick, sweetish mucus. Has now palpitation and pain in heart. Trip-hammer pulsation, indicating Thrombosis. Passages now range from 4 to 6 per day.

Microscopic Examination.—Feces thin and watery, with whitish-yellow masses and ropes of gelatinous (colloid) matter, containing numerous colloid cells. Torrula cells in multitudes. There are also masses of the *Saricina ventriculi*. The alimentary canal is in a highly fermentative con-

dition, and is probably coated, from one end to the other, with an adherent, slimy, pultaceous yeast; such as is met with after death in patients dying with chronic diarrhœa. This condition should satisfy any one of the impropriety of using astringents in this disease. Efforts should rather be made to keep the alimentary canal cleared of this yeast layer, and to promote healthy secretions from the alimentary surfaces. In the stools are large quantities of oil globules. Urine scanty and loaded with lithates and oxalate of lime crystals.

CASE XXXIV. *History.*—George —, Sergt., 2d Bat. Invalid Corps. Was attacked first at Paris, Ky., November, 1862, with simple diarrhœa, attended with no pain. Before this was entirely subdued, by imprudence in eating and drinking late at night, the disease assumed a chronic form; when the diarrhœa was attended with the generation of intestinal gases, with sour eructations and passages of wind at night, followed by early morning evacuations. Remained with his regiment most of the time since the attack, till wounded in Mississippi in February last, when he entered a hospital at Memphis; and soon after came to Dennison Gen. Hospital. Has been gradually improving since wound healed. Is in usual flesh, and has now (Nov. 17, 1863) from 1 to 3 passages per day. Much troubled nights at times with flatulence. A dose of aromatic sulphuric acid at once relieves this for the time being. There is a paralytic tendency in lower bowels, which is very disagreeable at times. Is improving, with prospect of soon being well.

Microscopic Examination.—Feces natural in color, but thin and foamy, like yeast. Passages on account of which appear to be very large, frequently amounting to two quarts. Stools contain little gelatinous (colloid) masses of matter, which are filled with colloid cells. Torula cells quite numerous. Urine scanty, and loaded with lithates and crystals of oxalate of lime.

CASE XXXV.—*History.*—Henry Irish, private Co. F, 6th N. H. V. I. Has had chronic diarrhœa about 6 months. Attacked in Kentucky. About 4 months ago was taken down with intermittent fever, which has continued at intervals to date (Nov. 18th). The diarrhœa gradually increased from 1 to 10 and 12 passages per day. Passages profuse, painless and watery. Has had more flatulence recently than when first attacked. This accompanies him principally at night, and is accompanied by sour eructations and passages of wind, and followed by stools towards morning. At first the food would pass soon after eating, undigested. The passages are now thin and watery, and range from 5 to 6 daily. Appetite good. Legs feel often numb, and “get asleep.” Lower bowels partially paralyzed. Head feels numb and “mixed up.” Ears ring at night. Considerable constriction about chest, with night and morning cough and expectoration of sweetish mucus. Tubercles are being deposited. Pale and anæmic. Some of family have died of phthisis. Nails bent. Has palpitation of heart, which troubles him much at night. Patches of what appears to be diphtheritic exudation in fauces, but which are really aphthous patches or layers of yeast plants, rapidly developing in the glycogenic mucous secretions.

Microscopic Examination.—Feces thin and watery, and from 5 to 6 per day. Appetite good. Has much flatulence at night, with sour eructations. Stools filled with small masses of gelatinous (colloid) matter, which contain many colloid cells. Torula cells abundant. There are also many confervoid filaments.

CASE XXXVI.—*History.*—Alvin B. Williams, private Co. F, 11th N. H. I. Has had chronic diarrhœa since the 1st of September (2½ months).

Followed an attack of ague. Has become considerably emaciated. Muscles soft. Passages thin and copious, ranging from 3 to 4 per day. Pains in lower bowels before and after stools. No tenesmus. Bowels and stomach bloat much during evening and night. Some cough. Not entirely relieved from ague. Legs soft and "get asleep." Head feels numb and "mixed up." Ears ring at night. Lies easier on right than on left side.

Microscopic Examination.—Stools quite natural in color and consistence. Contain many small masses of gelatinous (colloid) matter that are filled with colloid cells. *Torrula* cells are abundant.

CASE XXXVII.—*History.*—Wm. M. Baker, private Co. E, 7th O. V. I. Has had chronic diarrhœa since 1st of August, 1863. Followed an attack of ague. Is thin, anæmic and feeble. Passages range from 3 to 4 per day, thin and copious. Pain mostly just previous to passage. Troubled somewhat with wind during the night. Has a dry cough, constriction about chest, and much pain in cardiac region. Cannot lay on left side. Has the trip-hammer pulsation, indicating thrombosis. Legs prickle and "get asleep" frequently.

Microscopic Examination.—Stools thin, and contain small masses of gelatinous (colloid) matter filled with colloid cells. *Torrula* cells quite numerous. Casts of the tubular glands and of large intestines are frequently met with.

CASE XXXVIII.—*History.*—Mich. Mulligan, private Co. F, 61st O. V. I. Attacked with chronic diarrhœa about the middle of July last. Followed typhoid fever. Is reduced in flesh. Not anæmic, but weak. Passages from 8 to 9 daily, thin, copious, and mostly at night and early in the morning. Bloats much with wind evenings and nights. Palpitation and pain in heart. Trip-hammer pulsation, indicating the presence of fibrinous depositions (thrombi). Has difficult and frequent micturation. Legs are apt to "get asleep." Head feels numb and "mixed up."

Microscopic Examination.—Feces have disseminated through them numerous small masses of gelatinous (colloid) matter, containing colloid cells and filaments. A multitude of *torrula* cells are present. *Confervoid* filaments are abundant. The fecal matter is also filled with oil globules of large size, from the surface of which acicular crystals of stearine radiate in all directions. These crystals, under the microscope, resemble cilia. Numerous casts of the tabular intestinal glands are present, and also many masses of highly refractive polyhedral cells, each of which contains a crystal of sugar. Water loaded with lithates and oxalates.

CASE XXXIX.—*History.*—James Feney, private Co. C, 98th O. V. I. Has had chronic diarrhœa since the middle of March last. Followed an attack of typhoid fever. Is now very thin, pale, weak and anæmic. Passages from 10 to 15 per day, thin, and rather copious. Gripping pains previous to passage, and but little or no tenesmus after. Is troubled with wind only at night. Pain in back. Urine scanty and micturation painful. Water loaded with lithates and oxalates. No visceral enlargement.

Microscopic Examination.—Feces filled with small masses of gelatinous (colloid) matter, containing numerous colloid cells. *Torrula* cells moderately abundant. Many *confervoid* filaments. Oil globules, covered with ciliated or acicular crystals of stearine, numerous. Feces decidedly oily.

CASE XL.—*History.*—David Ames, private Company I, 21st O. V. I., has had chronic diarrhœa, following typhoid fever, since the middle of June last, (now Nov. 18th). Passages, from eight to ten daily; thin and copious. Pain preceding passages; easier after. Bloats at night, and has

eructations and passages of wind. Urine scanty, micturation painful, and urine loaded with lithates and oxalate of lime.

Microscopic Examination.—Stools contain numerous masses of gelatinous (colloid) matter, filled with colloid cells. *Torrula* cells numerous. Feces fatty and offensive.

CASE XLI.—*History*—Samuel Humphry, private Company H, 92d O. V. I., has had chronic diarrhœa since the middle of last August—over three months. Is thin, rather anæmic, weak, pale, and appetite good. Has now from five to eight passages daily; thin and copious. Pains before stools, which are relieved by passage. Bloats with wind evenings and nights. Stools mostly during latter part of night, and early in the morning. Some cough and expectoration. Legs prickle and “get asleep” often. Head confused, frequently with a numb sensation.

Microscopic Examination.—Feces full of small masses of gelatinous (colloid) matter, filled with the large colloid cells. *Torrula* cells abundant. Urine scanty, and loaded with lithates and oxalate of lime.

MICROSCOPIC EXAMINATION OF URINE.

In chronic diarrhœa the urine is usually small in quantity, rather high colored, and deposits, on standing, a tolerably large sediment of pinkish or brick-colored lithates. The disease is not unfrequently accompanied and followed also by obstinate oxaluria and phosphuria. The presence of purpurine is frequently strongly marked.

SUGAR IN FECAL MATTERS AND IN MUCOUS SECRETIONS.

In all three stages of the disease, sugar is largely present in the fecal matters, and in the mucous secretions of the alimentary canal.* *Torrula* cells are abundant, and frequently the developing spores of a species of *pennicillium*, and sometimes the cells of the *saracena ventriculi* are met with. All these are indicative of active fermentative changes in the amylaceous and saccharine matters present. The development so largely of gaseous products during the evening and night, is indicative of active fermentation of the amylaceous food eaten during the day. There is evidence that the secretions of the mucous membranes of the alimentary canal, fauces, mouth, and pulmonary surfaces, eventually become saccharine. This is evidenced in the development of *torrula* cells and filaments of *pennicillia* in the viscid layer of mucous lining the whole alimentary canal, and in the mucous secretions of the œsophagus, pharynx, larynx, tracheæ, and mouth, in the later stages of the disease. This development on the surface of fauces, pharynx, and mouth, resembles the exudations in diphtheria, for which it is frequently taken.

CHOLESTORINE AND SEROLINE IN FECES.

Cholestorine and seroline occur quite largely in the feces of chronic diarrhœa, the latter more largely than the former. The longer the feces stand and ferment, in or out of the bowels, the less cholestorine there is and the more seroline.

CRYPTOGAMIC VEGETATION IN FECES.

The cells of the so-called *torrula cervisia*, occur largely in the fecal matters of every well worked case of chronic diarrhœa. There is also the

* Fatty Products, and crystals of the triple phosphates and oxalate of lime are also frequently largely present in the stools.

cells of what appears to be a larger species of *torrula*. These are not uniformly met with. The *saracina ventriculi*, or "wool sack" plant, is often present in large quantities. Such cases are more obstinate, there being greater difficulty in checking the abnormal development of intestinal gases. There is also another species of *saracina*, which I have met with occasionally. The cells are smaller and more pearly than those of the *ventriculi*, and occur usually single or in two's, and sometimes in fours. Two or three species of *confervæ* occur abundantly in all well marked cases. Occasionally the vegetating spores and mycelium of a species of *pennicilium*, are met with in the colloid matter, especially in cases where the stools are mainly made up of this gelatinous substance, and are of a greenish color.

This colloid or gelatinous matter has a strong resemblance to several low algoid forms. It is uniformly present in all true cases of chronic diarrhea. It occurs, however, much larger in the stools in malarial localities than in non-malarial.

What I have in this paper called colloid cells, resemble in a marked degree the *Protococcus Cocoma* of Kützing. Saw that this latter has a brick-redish color, whilst the colloid cells of chronic diarrhea are usually yellowish or some shade of green. They also resemble somewhat those of the *Purfurcaria Lumbricales* of Kützing, and the cells of the *Lemania Incurvata* of Hassel, which is found in fresh water. They, however, resemble more strongly the *Vauchesia Clavata* of Hassel, that is met with in fountains and running brooks, attached to stones and sticks, and is of a green color.

Frequently masses of highly refractive polyhedral cells are met with, each cell of which contains a crystal of sugar. These appear to emanate from the colloid cells; they being the cells that make up their contents.

Experiments Connected with the Producing of the Chronic Diarrhœa of Armies, with its Intercurrent Abnormal Conditions, by Feeding upon Army Biscuit.

It was found that wherever the soldiers were thrown largely upon the use of the hard bread or army biscuit as a diet, a peculiar train of abnormal manifestations presented themselves. These are—

1. Constipation.
2. This constipation is soon followed by fermentative changes and the development of intestinal gases and yeast plants in the food, too long delayed in the alimentary canal.
3. These fermentative changes are always worse towards evening and during the night, and go on increasing from day to day, till
4. Finally, the gases and yeast plants developed, produce so much intestinal irritation that diarrhœa ensues, which soon becomes chronic, and not at all amenable to the treatment of ordinary diarrhœic conditions.
5. Accompanying the fermentative changes is always a paralytic tendency more or less strongly marked. This is manifested in the alimentary canal, and especially in the large intestines; next in the extremities, the legs prickling and "getting asleep" frequently, with ringing in ears, and a numb, mixed up, or confused feeling in head, &c.
6. A cough, with more or less hoarseness, usually sets in, especially during the night and on getting up in the morning, accompanied by the expectoration of a thick cream colored sweetish mucus.
7. This is followed by more or less constriction in breathing, with frequently palpitation of the heart on any excitement.

8. After the diarrhœa sets in there is generally a remarkable tendency to fibrinous depositions in the heart (thrombosis), and to the clogging up of the pulmonary vessels with fibrinous clots (embolia), with pains and aches in extremities and back.

To demonstrate more positively that these abnormal conditions had their origin in the too exclusive use of army biscuit as a food, it was determined, if possible, to institute a series of experiments upon the exclusive use of this kind of food, upon strong, healthy men, in a healthy locality, and free from the enfeebling influences of army life. Accordingly, on arriving in Cincinnati, I engaged the services of two strong, healthy men, of good habits, and in the vigor of life, for this purpose. The experiments were conducted with watchful care, from day to day, and the results were most convincing and conclusive in favor of the previous observations upon the soldiers, as will be seen by the following daily record of the experiments:

EXP. I.—Mr. H———. Age 36. Height 5 feet 10 inches, and weight 150 lbs. October 12th, at noon, commenced feeding him entirely on army biscuit, with a little cheese. For drink, used water, to which, at dinner and tea, about one ounce of good whisky was added.* Seemed to relish the new diet, and ate heartily. Hours for meals, 7 A. M., 12 M., and 5 P. M. The night of 12th slept well. The following morning had a passage from bowels at the usual time, but less free than normal.† Felt well during the 13th, eating heartily, and sleeping well at night. On the morning of the 14th was constipated, having no passage from the bowels, although he repaired as usual to the water-closet. Felt well during the day and night of the 14th. On the morning of the 15th, with difficulty, had a scant passage of pale, plastic feces. During the 15th felt occasionally a slight dizziness and less muscular vigor than usual. Slept well during the night. Had no stool on the 16th. Began to have some rumbling in the bowels towards evening, from the movement of wind, which appeared to be generated in the small intestines principally. During the evening ate a couple of apples. Slept well during the night. On the morning of the 17th had a very scant passage of pale, plastic feces. After passage felt a throbbing and heat in the lower portion of large intestines. Towards and during the evening there was considerable flatus, with some eructation of wind. Before retiring ate an apple and drank freely of water. Slept well. On the 18th had no passage. Felt a dizziness all day, with considerable muscular debility. Appetite excellent. Still relishes the food, but would like it better if he had some meat with it. Lower bowels feel numb, distended and torpid. Bowels distended with wind during the evening and night. Slept well. Had no passage during the 19th. Felt a dizziness all day, with a want of muscular vigor. Exercised freely in walking and felt better. Slept well during night. On the morning of the 20th had a difficult, scant passage of pale, plastic feces; after which had a heat and throbbing in lower bowels, which were inactive and partially paralyzed. On the evening and night of the 20th bowels much distended with flatus, with eructations and passages of wind. Slept well. 21st, had no passage. 22d, had no passage. Yesterday and to-day has had a numb, dizzy feeling in head, which is partially dissipated by walking vigorously. Appetite good. On the morning of the 23d had a difficult, scant passage of pale, plastic feces. Lower bowels more inac-

* Was accustomed to the taking of one or two drinks of whisky daily. For this reason the whisky was added to the amylaceous diet.

† Was accustomed to having a healthy stool regularly every morning.

tive than usual. Passed considerable wind. During evening and night troubled much with flatus. Slept well. 24th, had no passage. Felt well, but not as strong as usual. Head feels numb and legs frequently "get asleep." During evening and night bowels distended much with wind, which appeared to be in constant motion. 25th, had no passage. Felt well, but less vigorous than usual. Peculiar numbness about head. Appetite good. Upper bowels and stomach distended with flatus in motion during evening and night. Ate a couple of apples before retiring, and walked about two miles. Rather wakeful, yet felt well. On morning of 26th had a difficult, scant passage of pale, ash colored, plastic feces. With the exception of numb sensations in head, legs and lower bowels, felt well. Appetite good. Tongue clean. Very eager for meat. During evening and night bowels and stomach much distended with wind, on account of which sleep was disturbed. 27th, had no passage. Felt a heat and throbbing in the lower part of the intestines. Appetite good. Less vigorous than usual. Wakeful during night. 28th, no passage. Tongue clean, with a red border and streak along the center. Appetite good. Considerable muscular debility. Numb feeling in head, and limbs liable to "get asleep." Bowels and stomach distended with flatus during the evening and night. Wakeful. 29th, throbbing and heat about the rectum. Had a rather more free passage than usual during the morning. Appetite good. Considerable muscular debility, with numb sensations. Considerable thirst. During the latter part of day and evening and night bowels much distended with flatus. Wakeful, but felt well. 30th, no passage from bowels. Felt about the same as on the 29th. Wakeful at night. 31st, quite a free passage during the morning. Considerable heat and throbbing about the lower bowels. Large quantities of flatus developed in stomach and bowels during evening and night, with eructations and passages of wind. Wakeful. Aroused about 4 A. M., on the morning of November 1, with a severe bearing-down pain in the lower bowels, and a desire to go to stool. Had a copious passage, which was thin and watery, and of a pale ash color. Passed large quantities of flatus. Heat and throbbing pain about lower part of large intestines. Small intestines and stomach distended with flatus before the stool. The free passage relieved these unpleasant symptoms, so that he fell asleep readily again, and slept till 7 A. M. Got up free from pain and feeling well, save the disagreeable paralytic symptoms. Appetite good. Somewhat debilitated. Tongue clean, with red streak along the center. Flashes of heat over the body, intermitted by chilly sensations. Bowels distended almost constantly with flatus. Much worse during evening and night. Retired early and slept well till 3 A. M., November 2, when he was awakened by a severe bearing-down pain in the lower bowels, with an urgent desire to go to stool. Had a copious watery discharge, with considerable wind, which relieved the pain. Considerable heat and throbbing in lower part of large intestines. Felt well during day. Appetite good. Bowels distended with flatus during the evening and night. At 3 A. M., November 3d, had another profuse passage of pale, watery feces. Considerable heat and bearing down and throbbing in lower part of large intestines. Much debilitated during the day, but appetite good, and free from pain. Tongue clean, with a red streak along the center that felt sore. On examining the feces with the microscope, they were found to have all the peculiarities of those of chronic diarrhoea. During the afternoon, evening and night, the stomach and intestines were very much distended with gases, producing considerable pain. Rather wakeful. Called up on the morning of the 4th about 2 A. M. Had a profuse passage of thin, pale,

watery feces, accompanied by much wind. Between this and 10 A. M. had six profuse evacuations of the same character, after which felt better. Fearing to carry the experiment farther in this case, I gave him, on retiring, a cathartic dose of Rochelle salts, which operated freely. The following morning I ordered for him a full breakfast of ham and eggs, with tea and potatoes stewed in milk. Was ravenously hungry and ate a hearty meal, after which felt much better. Had no further evacuations after 10 A. M. during the 5th. At 3 P. M. ordered six soft boiled eggs with water. These lay rather heavy in stomach, producing some sour eructations. Ordered him to walk briskly for two hours, which promoted their digestion. Retired at 9 P. M., feeling quite well. Slept soundly. November 6th, 7 A. M., soon after rising had a copious passage of thin, watery, and rather pale feces, but looking much better than the passages yesterday morning. They still had, under the microscope, the characteristic marks of chronic diarrhœa stools. There was considerable pain previous to the passage, and heat and throbbing in lower bowels after, but no tenesmus. Tongue clean, with red streak along the center and red edges. Made a hearty breakfast on ham and eggs, toast and tea, after which felt better.

From this time on he continued the albuminous animal diet, eating freely. Appetite remarkably good. Each day improvement was noticed in the tone of the bowels and in the appearance of the discharges, and in a lessened fermentative tendency in stomach and intestines, with a decrease of torrula cells and colloid (gelatinous) matter, and in an increased tonic of the muscles generally.

Nov. 9th, had quite recovered, so that the passages had assumed their normal appearance and consistence; and after this they came on at the usual hour, viz., every morning before breakfast. The tongue became natural in appearance, the countenance flush, the biliary secretions natural, and the feces lost all the characteristics of those of chronic diarrhœa.

Here is an interesting instance of the bringing on of chronic diarrhœa, by the use of dry army biscuit as a constant food. The subject was a strong, healthy man in the prime of life, who had been used to the substantial diet of the active business men of our western cities. From the commencement of the army biscuit diet to the time when the discharges assumed a morbid chronic diarrhœa type, was 19 days. The fermentative condition, and the production of torrula cells in the bowels, commenced and showed themselves in a marked degree on about the 6th day, and continued to increase until the army biscuit was laid aside.

The first abnormal condition produced by this diet was constipation, with a partial suppression of the biliary and intestinal secretions. This left the alimentary matters in the intestinal canal an unusual time, during which fermentative changes were excited. This fermentative condition increased daily, till the alimentary canal became filled with yeast, in a constant state of fermentative excitement, disengaging large quantities of carbonic acid gas, which distended the bowels with flatus. This fermentative influence appeared to be finally imparted to the epithelial tissue of the mucous intestinal membranes; especially was this the case in the large intestines, where the hardened feces accumulated and remained an undue time.

Just previous to the commencement of the diarrhœa and afterwards, there was a general paralytic tendency, especially marked in the intestinal walls, they losing their normal sensibility and contractility, under the ex-

citant and poisonous action of the carbonic acid and yeast plants developed during the fermentation of the amylaceous alimentary matters.*

About the time the diarrhœic discharge commenced in this case, there came on a hoarseness of the voice and a dry, constricted feeling about the pharynx and larynx. This was followed by soreness of the throat, which extended into the bronchial tubes and lungs, accompanied by a thick ropy, sweetish expectoration, and considerable night and morning cough, with oppression and tightness about the chest. This affection was different from any cold, and continued while the diarrhœa lasted. There was also, on any excitement, palpitation of the heart. I have noticed the same pulmonary derangements in all well-marked cases of chronic diarrhœa, where I have been able to accurately trace them back to their incubative stage.

EXP. II. This experiment was performed on a strong, healthy, middle-aged man, in the same way as the previous one, and corresponded so clearly in its results with Experiment I., that it is unnecessary here to any more than refer to the preceding detailed description.

The diarrhœa in this case commenced on the 21st day of feeding on army biscuit diet.

EXP. III. This experiment was performed on myself. Diet same as in Experiment I., and in all essential particulars the resulting symptoms were so similar, that it would be repetition to describe them in detail. Flatulence and constipation commenced on the third day. The diarrhœa began on the eighteenth day, by a single profuse passage in 24 hours, and this occurring in latter part of night. Extended the diet to the 24th day, on which the passages had increased to seven in 24 hours. On the 25th day, after a full dose of Rochelle salts, put myself on an albuminous diet, which soon restored the alimentary canal to its normal state.

POST-MORTEM APPEARANCES.

Lungs.—These are usually more or less invaded by either the clogging up of the pulmonary vessels with small fibrinous clots (embolia), or tubercular deposits in the lung tissue, or both. Where the disease has continued for any great length of time, scarcely an instance is found where there is an entire absence of pulmonary complication. The pulmonary and bronchial membranes present indications of more or less irritation; and frequently something like an exudation is noticed creeping up the pharynx into the fauces, and then dipping down into the larynx and trachea. This apparent exudation is not one in fact, it being composed—in every case I have met with—of torrula cells, and developing spores and filaments of a species of *pennicillium*; both of which indicate a saccharine or glycogenic and fermentative condition of the mucous membranes and their secretions. These apparent exudations—composed of yeast plants—creep up along the œsophagus into the pharynx and fauces, and then dip down into the larynx and trachea. They are unfavorable indications, and appear in the most marked degree a few days previous to death. They are more prominent in cases of chronic diarrhœa, which have accompanied and followed typhoid fever. The fecal matter of such patients is invariably filled with large globules of fat, many of which are covered with a crystalline crust, from which radiate acicular crystals in all directions. These acicular crystals resemble ciliæ, giving to the large fat globules the appearance of being animalcular bodies.

* In severe forms of the disease, the large intestines and sphincter ani become frequently so paralyzed that the feces pass involuntarily.

The lungs are frequently found filled with small tubercles, and sometimes with large ones, in process of disintegration. At others, the lungs either contain tubercles, or not, and are more or less hepatized; the congestion being directly the result of *embolia* (fibrinous clots), which have lodged in the minute pulmonary vessels, damming up the blood and preventing its free passage.

Heart.—The heart is nearly, if not always more or less involved in the disease. There is a disposition to the deposition of fibrin in the cavities of the heart, and in the vessels leading therefrom, producing the disease described by Virchow as *Thrombosis*. Granules, layers, conical masses and ropes of fibrin, usually of a white color, are found attached to the internal surfaces of the cavities of the heart, around the valves; and ropes of fibrin sometimes extend out into the vessels leading therefrom. There is also often more or less serous effusion into the pericardium.

Kidneys.—The kidneys, as a general rule, present no marked organic lesions. They are, however, almost constantly deranged in function, which sometimes results in organic disease.

Esophagus.—The esophagus is often congested and apparently inflamed, and frequently covered with mucus, filled with torrula cells and spores of a species of penicillium vegetating, forming a coating to the mucous surface not unlike a diphtheritic exudation.

Stomach.—The stomach is usually thickened, the tubular glands and villi more or less enlarged, and sometimes are found projecting beyond the walls, in small fungoid looking masses, wider above and constricted below. These little elevations are from one to several lines in diameter, and rise from $\frac{1}{4}$ to $\frac{1}{2}$ a line above the surface. They frequently run together, forming larger or smaller patches, and sometimes are thickly set over the entire internal surface of the organ, and appear not very unlike exudations, save that they have a reddish, vascular appearance. In cleaning the stomach, they are liable to be brushed or torn off, leaving ragged or clean-edged depressions, resembling the bed of ulcers. In this way many stomachs, when they are examined only after being cleaned, have the appearance of having been ulcerated, when really no such lesions existed. The final tendency of these follicular enlargements is to disintegrate, leaving ulcers. Ulceration, however, takes place in comparatively few cases, even where the diarrhoea causes death. These follicular enlargements are, in some way, connected with the formation of large quantities of colloid (algoid) matter, which is voided with the feces, and which contains cells and filaments. The formation of this algoid matter is indicative of a kind of *cancerous* tendency in the mucous lining of the intestinal canal. This colloid matter does not materially differ from that developed in goitre or broncocele, and from that formed in the fungoid elevations of the mucous lining of the bladder in a peculiar form of chronic cystitis, with pyelitis as a complication.

The intervening spaces on the mucous lining of the stomach, not occupied by the enlarged follicles, are usually more or less of a red beef color, ash or slate color, and sometimes greenish, indicating what appears to be either a high state of congestion and chronic inflammation, or an anæmic, deadened condition. The walls of the stomach are generally covered with an adherent slimy, greasy layer, which appears to prevent the food from coming in direct contact with its mucous surface. The internal gastric walls are usually more or less thickened and red. The organ is frequently considerably diminished in size, sometimes to one-third or one-fourth its normal capacity.

Small Intestine.—The mucous lining of the small intestine is usually covered with a thin, slimy, adherent layer of fecal matter, mucous and oily products, which sticks so closely that it is only removed by washing or scraping. This is a layer of yeast, filled with torrula cells, algoid matter, and decaying food, and is very offensive. With the exception of this layer, it is entirely empty of fecal matter, but distended with foetid gases. On the removal of this offensive coating, the mucous membrane is generally for the most part quite normal in appearance, save that here and there are inflamed streaks and patches, occasionally partially denuded of epithelium and ulcerated. The ulcerations, when they occur, are mostly in the lower portion of the ilium, near the cœcal valve.

Large Intestine.—This is usually very much thickened, and the internal surface covered with a thin adherent, dirty yellow pultaceous layer of slimy fecal matter, very offensive in odor, and of a greasy feel. This adheres so closely to the internal walls, that it is removed only by washing or scraping. It is filled with torrula cells, and frequently the vegetating spores of a species of pennicillium, with gelatinous algoid matter, with sometimes the saracina ventriculi, and a peculiar gelatinous (algoid) matter. These all belong to the yeast plant vegetation. They were found more numerous toward the stomach than lower down. The inner wall of the large intestine for its whole length, and that of about one inch of the lower portion of the ilium, adjacent to the cœcal valve, generally are found more or less thickly studded with ragged patches, or fungoid elevations, from one to two lines in diameter, and elevated above the surface about from one-fourth to one-half line. These patches are wide above and constricted below, and are composed of the enlarged intestinal follicles and gelatinous matter. In many instances two or more of these patches are found united, forming larger elevations. In cleaning the intestines many of these fungoid elevations are torn off, producing ragged-edged depressions, not unlike the beds of ulcers. These enlarged and highly congested and vascular follicles are connected in some way with the formation of the gelatinous matter. This matter is more or less tinged with yellow or green. The enlarged follicles may constitute simply a nucleus for its development. It is found disseminated in small lumps and ropes through the feces. In some of the worst forms of the disease, the passages are composed almost entirely of this colloid (algoid) matter. In such cases it is usually of a dirty green color by reflected light, and a dirty greenish-yellow by transmitted light. The solitary glands are enlarged, and are the seat of a blueish-black pigment, which readily points out their location. Frequently these fungoid elevations disintegrate, leaving ulcers in their place. These ulcers are met with of a large size in many fatal cases. Ulceration, however, is not as frequent in this disease as is generally supposed. The inner walls of the intestine become largely thickened frequently, and the calibre lessened. The intervals not occupied by the fungoid elevations are highly congested, and inflamed apparently, having a peculiar dark beef red color.

Sometimes cases occur where the mucous lining of the large intestine is merely of a beef red color, without any fungoid elevations. In others the beef red patches are mingled with others that are greenish, slate colored, or brownish. The intestinal capillaries are more or less clogged up with embolia (small masses of fibrin) which prevent the free passage of blood, and from which results the peculiar congestion and chronic inflammation, the absorbent power of the intestinal walls being more or less impaired or destroyed.

Mesenteric Glands.—The mesenteric glands of the large intestines are always enlarged, congested, softened, and gorged with blood in proportion to the intestinal lesions. The mesenteric glands of the small intestines are frequently also enlarged, softened and congested, but otherwise quite normal.

Omentum.—The omentum is generally entirely deprived of adipose, and is highly congested and red.

Spleen.—The spleen is always more or less enlarged, filled with liquid blood, and softened.

Liver.—The liver is, as a general rule, quite healthy and firm. It has more of a yellowish tinge than normal, but is usually otherwise natural in appearance.

Pathology of Disease.—This as indicated by the microscopic examination of the fecal matters, and of the lining membrane and capillaries of the alimentary canal, and of the pulmonary and cerebral capillary vessels and heart, consists—

1. In the development of fermentative changes in the amylaceous food retained an undue time in the alimentary canal, by which yeast plants, carbonic acid, and the other products of fermentation are largely developed.

2. The fermentative changes and the continued feeding upon an amylaceous food, eventually results in a highly saccharine or glycogenic and fermentative condition of the system.

3. This fermentative condition tends to accelerate cell development and cell transformation. In the spleen, mesenteric glands and blood-vessels, the fibrin cells are more rapidly developed and transformed into fibrin, and there is a strong tendency for it to become organized and aggregated into masses. The result is that fibrinous deposits are formed in the heart, producing the thrombosis of Virchow; and numerous clots (embolia) form and become fixed in the capillary blood-vessels of parts the most sensitive and irritable and the most irritated.* These increase and soon obstruct the free passage of the blood through such irritated parts, damming it up, producing congestions in the intestinal walls, mesenteric glands, and spleen, with more or less congestion of the brain and spinal cord, and a tendency to congestion and hepatization of the lungs from embolia accumulating in the pulmonary capillaries. From the tendency to cell multiplication produced by the fermentative state of the system, there is a marked disposition to the development of tubercles in the lungs.

The disease is primarily eminently a fermentative one, tending to produce blood clots in the heart and capillary vessels, from which result a great variety of peculiar, almost painless, congestions and chronic inflammations, with paralytic conditions.

Here we see why the vegetable acid salts of potassa, soda, and iron, operate so beneficially upon the disease, in acting as a solvent to the aggregated masses of fibrin in the vascular system, and in thinning the blood. We also see why anti-fermentatives are such important and valuable remedies in controlling the fermentative states which are abnormal.

The clogging up of the intestinal capillaries destroys, to a greater or less extent, the absorbent powers of the intestinal walls; hence the reason why it is impossible for the alimentary membranes to either pour out the materials that aid in forming chyme and in producing healthy digestion;

* The capillary vessels of the alimentary canal and lungs are generally the first to be clogged up with fibrin. The heart, brain, and spinal cord soon become involved to a greater or less extent.

or to take up nutrient products. In such cases the conditions are such as to tend to imperfect nutrition and finally to starvation.

From the clogging up of the intestinal capillaries with embolia (fibrinous clots), the follicles and villi become highly congested, which results soon in chronic enlargement of these organs. As they enlarge they protrude often in patches beyond the level of the mucous surface, forming frequently fungoid elevations, wider above and constricted below. These resemble somewhat patches of exudation, and with the surrounding and subjacent connective tissue, take on a peculiar abnormal action, resembling that of some forms of tumors (cancerous), where a gelatinous (colloid) matter is developed.* There are two forms of the colloid or gelatinous cancer occurring in the human body: one as a *tumor*, and the other as an infiltration. The latter is most common in the alimentary canal, particularly in the stomach and large intestines. It also occurs sometimes in the bladder. The latter occurs in the glandular organs, the peritoneum, omentum, cellular tissue, ovary, and bones. In the infiltrated variety the gelatinous matter occupies the meshes of the cellular substance, forming cysts from the size of a mustard seed to that of a hazel nut, which are filled with characteristic jelly-like matter, and which as they increase in volume, so completely subvert the primitive structures as ultimately to leave no trace of them. This colloid or gelatinous matter is either colorless, whitish, yellowish, or greenish, and is usually of the consistence of jelly.

Virchow rather objects to the term *colloid*, preferring the term *mucus*. The matter does not, however, resemble mucus nearly as much as it does gelatine, to which it bears a close resemblance in appearance, but which is really algaoid. Its most usual seat of development is the epithelial and connective tissue, the distinguishing characteristic of which is its property of affording gelatine. When the so-called colloid matter is developed in connective tissue, the growth (appears to be allied to homo-plasiae,) is not usually of that malignant type which it assumes when it is (hetero-plasiae) developed in bone, periosteum, or other tissues not yielding gelatine normally.

These colloid growths, when seated on mucus surfaces, appear in the form of enlarged follicles, villi, pappillae, or warts. These are precisely the forms presented in chronic diarrhoea—studding the surface of the large intestines, and often of the stomach, and frequently the lower portion of the ileum. They give rise to or develop large quantities of colloid (algaoid) matter, which is found abundantly scattered through the fecal discharges, in lumps and ropes. In the later stages of severe cases, sometimes almost the entire evacuations are made up of this matter, either nearly transparent, or which is of a dark dirty green by reflected light, and a dirty greenish yellow by transmitted light.

In bronchocele, a similar colloid matter is developed. The same substance is also formed in a peculiar, quite fatal form of chronic vesico-renal inflammation. In this disease the bladder is found studded with the same kind of fungoid elevations, as exist in the large intestines of chronic diarrhoea. Frequently, in chronic diarrhoea, these fungoid elevations disintegrate, leaving in their place ulcerating depressions, in which case pus will be found in the feces, frequently streaked with blood. Ulceration, however, is not as frequent as is generally supposed. In cleaning the intestines for wet preparations, the fungoid elevations are frequently

* This gelatinous matter is made up of large algaoid cells and filaments, enveloped in a jelly-like substance.

torn off, leaving either smooth or ragged-edged depressions, resembling ulcers. These are often taken for points of ulceration.

The diseased portions of the alimentary lining are a dark livid red—a slate color, ash color, or greenish. The solitary follicles are enlarged, and frequently the seat of pigment deposits; so that the locality of each can be readily recognized with the unaided eye, by the presence of a bluish-black dot.

Every and all remedial means that have a tendency to produce an astringent, soporific, or congestive influence, aggravate the disease. The great prime objects are to subdue the fermentative tendency; to dissolve the aggregated masses of fibrin in the clogged-up capillaries, and to supply that kind of diet, the want of which has caused the disease. Hence the reason why an albuminous animal diet with non-amylaceous vegetables in small quantity, anti-fermentatives, and the vegetable acid salts of the alkalies and iron are so valuable, and produce such charming results.

Cause.—The primary cause of the so-called chronic diarrhoea of our army, appears to be the amylaceous character of the diet, which consists in great part, often, of the dry *army biscuit*. Upon a careful and extended examination, it has been found that when the soldiers are on the march, they have to live mainly on the army biscuit, from the fact that they can carry cooked meats only for a few days' rations, and cannot carry usually the means for cooking on the way. The result is, that a considerable portion of the time, the dry biscuit constitutes their main food. This dry amylaceous diet produces a constipated state of the bowels. The retention of these starchy matters an undue time in the alimentary canal, results soon in exciting fermentative changes, during which large quantities of gaseous products are generated. This fermentative condition goes on increasing from day to day, till the contents of the alimentary canal becomes one fermentating mass of yeast, when the constipated condition gives way to the irritant cathartic influence of the developing yeast plants and constantly increasing gaseous products, and profuse discharges of fecal matters and wind result. Previous to this, however, the fermentation during the constipated stage has, by its irritative influence, produced a peculiar abnormal condition in the follicles and villi of the large intestines and stomach. Simultaneous with this follicular enlargement, quantities of colloid matter are developed. The intestinal canal and stomach becomes coated with a pultaceous, adherent, offensive matter, which excites fermentation in the amylaceous food soon after it is eaten. The food taken during the day begins actively to ferment by evening; and the stomach and bowels become distended with gases, and continue so until the food of the day has been all evacuated, when the flatulence gradually disappears. This daily increasing fermentation produces daily increasing irritation, resulting in a constant increase of the diarrhoea, which soon becomes chronic.

It has been noticed that in warm, malarious regions, the men are more liable to this disease; from which fact it has become quite a general belief that it is a miasmatic malady. In all malarious regions there is a much greater tendency to the development of low cryptogamic forms, and fermentation is sooner excited, and progresses more energetically than in non-malarious localities. This increased tendency in malarious districts to the development of yeast and other cryptogamic plants, and, consequently, to the development of fermentative changes, will undoubtedly explain the reason why, in such places, there is an increased liability to this

disease. In such localities, the gelatinous (colloid) products of the feces are peculiarly marked, and seem to aggravate the diarrhœa. The intestines appear to be in a condition to afford a proper nidus for the attachment and development of this peculiar vegetation.* It does not, however, appear to have anything to do as an exciting cause of the disease—it being merely a consequence of peculiar saccharine and fermentative conditions of the system. As soon as these are corrected, they cease to develop. It probably is a parasitic species, developing in the human and animal body whenever it is in certain abnormal states.

It will always be noticed that the men are much more liable to attacks of diarrhœa during and immediately subsequent to long marches, and after having lived for some time on a dry, amylaceous diet, that has produced more or less constipation, than they are when situated so as to cook and feed upon a plenty of good meat and vegetables.

This form of diarrhœa is always preceded and accompanied by active fermentative changes in the alimentary canal, developing large quantities of gaseous products, attended with eructations, which are generally more or less sour. The disease is very liable to run into a chronic form, if not taken hold of early. In the early stages of the complaint, a simple change of diet, from farinaceous to albuminous, is sufficient frequently to cure the disease in a few days. If this cannot be done, a simple cathartic dose of Rochelle salts, to clean out the alimentary ferment, followed by small, highly dilute doses of the vegetable acid salts of potassa and iron, will check the disease in the majority of cases.

That the amylaceous food is the principal cause of chronic diarrhœa, is further evidenced by the fact that the officers, who live on more of an albuminous and vegetable diet than the men, and have facilities for carrying and cooking a variety of food, are exempt from the disease, except when they subject themselves to the amylaceous diet of the men.

The active fermentation and development of yeast plants, and the resultant gaseous products in the alimentary canal, acts as an irritant poison and cathartic of a peculiar character. This is evidenced from the cancerous condition which it produces in the stomach and large intestines. They also produce paralytic symptoms in bowels, extremities, head, and in fact over the whole body—manifested in the involuntary discharges; the numb and prickling sensation in limbs; the confused, numb feeling in head; ringing in ears, &c.† They also produce bronchial and pulmonary irritation, with a remarkable tendency to tuberculosis, thrombosis, and embolia.

In the army, there is in all the men a peculiar chronic (cancerous) condition of the alimentary membranes, excited by frequent fermentation of amylaceous matters retained too long and which condition does not run on to chronic diarrhœa unless some enervating cause, such as over-fatigue, dysentery, typhoid, bilious, remittant or intermittant fever, or other cause, debilitates the system and further impairs the condition of the alimentary membranes. This is evidenced by the almost universal condition of the alimentary canal of apparently well soldiers who are shot dead in battle. (See *Eng. Surg. and Med. Hist. of Crimean War*). The follicles of the large intestines are more or less enlarged, and frequently some have disintegrated, leaving ulcers.

* This will be figured and described in the final report.

† Carbonic acid, when introduced into the system gradually, in abnormal quantities by inhalation, has a tendency to produce ringing in ears, confused numb sensations in head, and more or less paralysis of nerves of sensation and motion.

The amylaceous army biscuit diet of the common soldier, beyond its fermentative and carbonic acid poisoning effects, does not furnish to the system the proper proportion of ingredients for healthy alimentation and nutrition; and hence results a scorbutic condition which renders the disease obstinate to treat, unless this state is recognized and particularly attended to. This explains the reason why the vegetable acids, combined with potassa and iron are so useful in this disease. Rochelle salts are admirably adapted for exciting intestinal epithelial activity and secretion and absorption in the alimentary walls.

Any one kind of food, too long continued, has a tendency to produce derangements in the system of a scorbutic type. Amylaceous matters, too exclusively used, tend to excite abnormal actions in the parent epithelial cells of the mucous and serous surfaces and of the glands; while any one kind of animal food, too long and exclusively eaten, produces derangements that show themselves more strongly in the skin and mouth. A too free use of oils, and fatty food, and alcoholic beverages, produce the red blotched face and swelled carbunculated nose, oily surface, and erythematous swelling and redness of the skin generally.

Salt meats produce a dry, scaly eruption upon the surface, with spongy, swollen and discolored gums, loosened teeth, and a watery, flabby, often bloody tongue; with pains in the limbs and back, resembling those of chronic rheumatism; leaden-hued features; offensive breath; patches of extravasated blood in various parts of the body; hard, contracted condition of the muscles; stiffness of joints; diarrhœa and hemorrhage from mucous surfaces, generally; mental depression, and indisposition to any kind of exertion.

From this scorbutic condition, produced in all the men by the want of the necessary variety in their food, arises a long train of the most fatal and obstinate diseases of the army. Among these may be mentioned chronic diarrhœa, dysentery, the so-called muscular rheumatism, hospital gangrene in wounds, tuberculosis, fibrinous depositions in heart, (Thrombosis), the clogging up of the pulmonary vessels with fibrinous clots (Embolia), paralytic conditions and tendencies, and many of the diseases of the larynx, eye and ear. This condition of the system also renders it extremely subject, when exposed, to the exciting cause; to typhoid and intermittent and remittant fevers. The vital powers are so depressed, that the organism, on slight exposures to cold, is liable also to be frost-bitten, and strongly inclined to attacks of pneumonia and bronchitis, with diseases of the eye and ear. In short, the long list of army diseases may, in a great measure, be traced to an extreme susceptibility to them; which susceptibility is produced by a want of a proper admixture of nutrient ingredients in the food of the soldier in campaigns. All agree that scorbutic states arise from this cause; and no one of any experience in army diseases can fail to trace almost everywhere among the men some symptoms of scurvy. If it is not plainly visible in the man, who appears well, it will make itself manifest in him, as soon as he is placed under treatment for any disease, in the remarkable benefit his system derives from the vegetable, acid salts of potassa and iron, and the free use of those articles of food his system has been deprived of. Without this treatment almost all diseases in the army become obstinate to treat, much more so than similar ones in private practice.

Pincoff's speaks thus of the scorbutic condition of the men in the Crimean war: "Typhus was at that time (the winter of 1854-5) raging fiercely, and I am convinced that if not its main cause, certainly the cause

of its great mortality was the *scurvy*. Of twenty patients admitted during that period, eighteen were usually scorbutic, eight, perhaps, would be so deeply affected (as indicated by sloughing ulcers, gangrene of the mouth, general dropsy and *chronic diarrhœa*) as to render recovery impossible." He expresses the opinion that out of the 23,587 cases of diseases of the stomach and bowels, 10,970 cases of fevers, and 2,023 of frost bites which occurred, the great majority were scorbutic.

Macleod, in his notes on the surgery of the war in the Crimea, states that *scurvy among the men was not usually discoverable by the ordinary signs*; by reason of its being so frequently masked behind some other ailment.

In the Med. and Surg. History of the British army which served in Turkey and the Crimea, published by the British Government, vol. ii., p. 171, it is stated that, "from the details now submitted, it will be readily understood that *scurvy* was an affection of some importance at one period in the army. It is to be observed, however, that the returns convey a faint conception of the disastrous part which it acted among the troops, for, although it was only in comparatively rare instances that it presented itself in well defined forms and as an independent affection; yet the prevalence of the *scorbutic taint* was wide-spread, and in a vast proportion of cases, evident indications of it existed as a complication of other diseases, fever and affection of the bowels. Indeed, it may be stated that, during the first six months of the siege, all morbid actions in the older residents were more or less scorbutic symptoms; and the fact is constantly commented upon by medical officers. Thus Dr. Marlow, 28th Reg't remarks: "Although there are apparently few cases of pure *scurvy* marked in the return, nearly every admission into hospital exhibited unequivocal signs of the scorbutic taint."

Mr. Baudens, in the French returns says: "Scorbutus prevailed, under an epidemic form, and was rarely witnessed without being complicated with diarrhœa, intermittant and remittant fever, bronchitis, pneumonia, etc. These complications were the most direct causes of the mortality which *scurvy* produced."

Seriae states that, "at the end of February more than 3,000 cases of *scurvy*, in which the disease was well marked, existed. Some patients had only *scurvy*—in others it was associated with diarrhœa, dysentery, and typhus or typhoid affections—above all, with frost bites, to which it greatly increased the liability. These combinations were all-powerful; the sick were unable to resist them, and succumbed to swell the daily augmenting record of our mortality."

In relation to a complaint which is very common in our army, viz: muscular or chronic rheumatism, we find the following statement in the Medical and Surgical History of the British army, etc., p. 175. "One of the most constant precursory symptoms of *scurvy* was an obscure form of muscular rheumatism. The individual complained of pains in his legs of an aching character, and his movements were tedious and painful; there was, in these cases, no articular inflammation observed, and, though the feet and legs were generally œdematous, there was little enlargement of the ankle joints, the affection, probably, has been, in some instances, mistaken for rheumatism, and perhaps treated in the ordinary manner, but it was merely one of the signs of general cachexia, and advantageously treated by a return to the comforts of life."

In old cases of chronic diarrhœa, it frequently happens that the diarrhœa somewhat abates, the appetite becomes remarkably good, and the patient fattens rapidly. His abdomen becomes distended and hard—it being

either dropsical tympanitic, or distended by enlarged visera—and the whole surface becomes bloated, enthematous, and presenting the appearance of having been produced by an excessive and too exclusive use of alcoholic beverages. The eyes become prominent, red and watery; the thyroid glands become enlarged; the heart gives marked evidence of fibrinous depositions internally;* the breathing is oppressed and there is more or less of a paralytic tendency.

Remarkable Similarity Between the Chronic Diarrhœa of Armies and the Disease in Swine Known as Hog Cholera.

Several years ago, at the suggestion of gentlemen largely engaged in fattening swine, I entered upon a careful and lengthy series of investigations connected with the causes, pathology, prevention and treatment of the fatal and wide-spread disease in animals, known as "Hog Cholera." This disease has been for several years so extended and fatal in districts where large lots of hogs were being fattened, that uniformly from 20 to 80 per cent of them would die. The average loss was from 30 to 40 per cent. It even attacks, in certain localities, hogs and sometimes cattle that are fed largely and exclusively upon good, sound corn. I have made over one hundred careful post mortem examinations in this disease, and have studied the symptoms, in detail, before death, and have conducted extended experiments on a large scale connected with prophylactic and remedial means, and am perfectly convinced that hog cholera is the same disease in animals, as that which is known in the human subject in armies as chronic diarrhœa.

The same colored passages and kind of diarrhœa, preceded by constipation, with a tendency to fibrinous depositions in the heart (thrombosis), to the clogging up of the pulmonary capillaries with embolia, to tubercular depositions and paralysis, occur in hogs when they are fed too exclusively on the acid and fermenting slops of whisky distilleries, or on mouldy, sour or fermenting corn, or even sometimes on good, sound corn, as we find in the chronic diarrhœa of armies. Both diseases are the result of feeding too exclusively upon amylaceous food, or the products of its fermentation.

In hogs the disease begins from the third to the eighth week after they are put exclusively upon this kind of food. If they pass the eighth week without an attack, they begin to thrive and improve rapidly. During the disease, the feces are of a pale ash color, and filled with more or less colloid matter, and a multitude of torrula cells. The follicles in the stomach and large intestines, and especially in the latter, are more or less enlarged and protrude as in chronic diarrhœa. There is a remarkable tendency to fibrinous depositions in the heart (thrombosis), to tubercular deposits in the lungs, and to the accumulation of embolia in the pulmonary capillaries, resulting in a damming up of the blood, hepatization and death. Before death, the heart always beats spasmodically, which is indicative of fibrinous depositions in its cavities, and of the damming up of the blood in the lungs by the accumulation of embolia in the pulmonary capillaries, and of an early fatal result. The body becomes more or less paralyzed—especially is this the case with all the posterior part of the body and hind

* It has been noticed that in certain cases of heart disease, the thyroid glands become enlarged, and the eyes prominent, watery and red. Whether there is any analogy between the condition of the system in this form of heart disease and that producing heart disease, chronic diarrhœa, paralytic tendencies, etc., in the army, I am unable to say. I merely mention the circumstance here, to direct attention in this direction.

legs. There is evidence of ringing in the ears, from the fact that the animal carries his head tipped to one side, and every few minutes shakes his head. The eyes become affected, so that there is always, in the later stages of the disease, more or less blindness. The appetite is always good till the spasmodic or trip-hammer pulsation of the heart begins.

The post mortems reveal the same conditions and lesions that are found in chronic diarrhœa.

The tendency to this disease varies with the state of the system, the meteorological conditions and malarious tendency or disposition to the development of low cryptogamic forms; that is—other things being equal—it is more prevalent during those seasons, and periods of the season, when cryptogamic vegetation is the most active, and there is the greatest tendency to fermentative changes.

Those animals that survive and pass the critical period—from the third to the eighth week after full feeding begins—without having the disease, although they thrive and take on fat rapidly, yet their systems are enfeebled, and they present many evident symptoms of being in a diseased condition. The skin becomes red and erythematous over the whole body; the hair partially falls; scrofulous sores and swellings frequently appear; they have more or less cough, with paralytic tendencies in the posterior part of body; their limbs and muscular system become feeble; and any even very moderate driving or exercise is extremely apt to produce pulmonary congestions and trip-hammer pulsations of heart, which are followed by sudden death. On post mortem, the lungs are found hepatized, and the pulmonary capillaries filled with embolia, and the heart with ropes and masses of fibrin, and in the same condition, so far as the lungs and heart are concerned, as when the animals die of hog cholera.

The products of the fermentation of amylaceous matters—such as sugar, alcoholic beverages, carbonic acid and vinegar—when too excessively and exclusively used, have a tendency to produce derangements similar to those which result from the too exclusive use of starchy food.

These investigations throw valuable light upon the bowel complaints of children, especially those where the stools are gelatinous and green, and contain colloid matter. There is no doubt but that all these abnormal states arise from the too exclusive use of fruits, and starchy and saccharine substances, which children are largely indulged in.

Drinking of Vinegar for Obecity.

The same kind of constipation, flatulence, diarrhœa, cough and disposition to tuberculosis and fibrinous depositions in the pulmonary capillaries and heart, occur in cases where vinegar is drank daily to reduce obeicity, or for satisfying a morbid appetite. Every observing physician has noticed the tendency vinegar has, when taken largely, and daily repeated, to produce irritation of the intestinal and pulmonary membranes with diarrhœa and cough. Several cases of this kind are published in foreign journals. The following is one in point, taken from the Second Volume of the London Medical Gazette, 1838-'39 :

“A few year since, a young lady, in easy circumstances, enjoying good health, was very plump, had a good appetite, and a complexion blooming with roses and lillies. She began to look upon her plumpness with suspicion, her mother being very fat, and she afraid of becoming like her. Accordingly she consulted a woman who advised her to drink a small glass of vinegar daily; the counsel was followed, and the plumpness soon

diminished. She was delighted with the success of the remedy, and continued it for more than a month. She began to have cough, but it was at first dry, and regarded as a cold that would subside. But from being dry, it was presently moist. A slow fever came on with difficult breathing; her body became lame, and wasted away; night sweats, with swelling of the feet, succeeded, and a diarrhœa terminated her life. On examination, all the lobes of the lungs were found filled with tubercles and somewhat resembled a bunch of grapes."

Remarkable Resemblance between the Symptoms and Intercurrent Abnormal Conditions of Chronic Diarrhœa and those of Diabetes.

There is a remarkable similarity between the complications and many of the symptoms and tendencies of chronic diarrhœa and those of diabetes. In both there is a highly saccharine or glycogenic condition of the system, and a peculiar abnormal tendency to fermentative changes. In both there is a remarkable tendency to heart disease (thrombosis of Virchow,) and tuberculosis, with paralytic tendencies, and diseases of the eye and ear. In the one disease there is a highly saccharine condition of the feces and alimentary secretions, and in the other of the urine. In the former, the liquids of the body are flowing off through the bowels, and in the latter through the urinary organs. Torula cells are developed largely in the increased excretions of each disease. In chronic diarrhœa the urine is scanty, and in diabetes the bowels are constipated. In both diseases there are marked dyspeptic symptoms, with sour eructations; mouth and fauces either dry or watery; tongue clean and red; marked thirst and appetite, and a constantly increasing emaciation, with inability to maintain the temperature of the body up to the normal standard, from which inability results creeping, chilly sensations.

Resemblance between the Colloid Matter developed in the Stomach and Intestines of Chronic Diarrhœa, and that formed in Bronchocele.

In the valleys of Switzerland, where goitre is so common, the inhabitants live almost entirely upon vegetable food. This has been observed and particularly remarked by travelers, and those who are familiar with the people of these Alpine valleys.

This is interesting in this connection, since the colloid matter deposited in the *thyroid glands*, producing goitre, is closely analagous to, or identical in kind with, the colloid matter developed in the alimentary canal of chronic diarrhœa.

It has been determined by these investigations, that amylaceous food, its fermentation the alimentary canal, and the consequent development of sugar, carbonic acid, yeast plants, &c., rendering the system highly glycogenic and fermentative, are the true causes of those abnormal conditions of the system in chronic diarrhœa, which induce the development of colloid matter, and it is extremely probable that the colloid matter of bronchocele may have a similar cause or origin. The fact that the people of these goitreous valleys of Switzerland live mainly upon vegetable food, is strong evidence in favor of this opinion. The same kind of colloid development occurs, in certain conditions of the system, in the female breast and male testes.

Bronchocele prevails in the Alpine valleys of Switzerland to a greater extent than at any other known point. It is also quite prevalent in cer-

tain portions of England—as in Derbyshire and Nottingham ; from which fact the disease is known in these localities as “ Derbyshire Neck.”

This disease occurs to a most remarkable extent in the deep, warm, damp, malarious valley of the Rhone, in Switzerland. It also occurs in some deep, warm valleys of France, Spain, Germany and Austria, in England, and in some parts of South America. Wherever it is very common among the people, *the hygrometric and other meteorological conditions are such as to particularly favor the development of low cryptogamic forms ; fermentative changes are active, and the people are eminently vegetable eaters, drinking often much sour wine.* This disease is *colloid* in its character.

Where a people live habitually too exclusively upon amylaceous and vegetable food from infancy—especially in damp, low, malarious valleys—there seems to be a marked tendency to the development of goitre. There is also a disposition to colloid development in the testes and mammary glands, in the alimentary canal and the lining membrane of the urinary and genital organs ; and to flatulence, sour eructations, and indigestion. They are subject to diarrhœa, palpitation of the heart, and to fibrinous depositions in the pulmonary capillaries, and congestions in the lungs, brain and intestinal walls. They are also liable to impairment of voice, hearing and vision ; and often the lower extremities give more or less indications of paralytic tendencies.

When the goitreous tendency is extreme, a liability for it to run into that extreme idiotic, pitiable form of the disease, denominated cretinism, is present. Goitre may make its appearance at any period of life, though more commonly the thyroid glands begin to enlarge in early years.* In cretinism the disease is congenital—the children being born idiotic and with thyroid tumors, more or less large, and which often become immense as they advance in years. Such persons are diminutive in size, pale, anemic, and have a particular affection for the sun, which they gaze at for hours with a vacant stare. They may really be said to be sun-worshippers by intuition.

Cretinism.—This never occurs except where goitre is very prevalent. It is the extreme state of congenital colloid disease. This disease may not be confined to the thyroid glands. It extends frequently to the mammæ, testes, lining membrane of the alimentary canal, and that of the urinary and genital organs. The stature is seldom above $4\frac{1}{2}$ feet, and often much less ; the cranium is deformed, and has a conical shape ; the forehead thrown backward, narrow and flat, and the occiput on a line with the neck. Flesh soft and flaccid ; skin wrinkled, yellow, pale and cadaverous, dirty, and covered by chronic eruptions ; the tongue is thick, watery, and hanging out of mouth, which is open, large and slaverling. Lower jaw long and prominent ; eyelids thick, eyes red, small but prominent, watery, and frequently squinting. The belly is large, prominent and flatulent ; the senses are more or less defective, or altogether abolished—the *Cretin* being often deaf and dumb : and those who possess the faculty of speech, speak imperfectly and with difficulty. Cretins are voracious, and addicted to masturbation. They often pass their feces involuntarily. The mammæ are voluminous and pendant, and the testes large, the scrotum extending frequently to the knees. The eyes are

* These investigations appear to throw valuable light upon a great variety of sarcomatous abnormal developments, and especially that type known as gelatinous sarcoma, and other colloid forms of disease. These appear to be expressions of certain systemic conditions, which are abnormal, and must be corrected and the causes removed before such diseased developments can be successfully checked.

small, the pupils contracted and not very sensitive to light. The look is a fixed stare, without expression. The external ear is large and stands out from the head, and the hearing is very defective. The elongated form of the lower jaw of the *Oretins*, and their thick and padded lips, make them resemble ruminating animals more nearly than man. The thyroid gland is always more or less enlarged, and often enormously so. Other glands, above named, are also enlarged. The *abdomen is usually distended with gases*, and largely developed toward the chest, and the flesh of the extremities is flabby. The genital organs are largely developed, the menses deranged, and the power of pro-creation defective. They seldom live beyond 30, and often die much younger. They are usually of the lymphatic temperament, with light hair and grey eyes. They are sun-gazers, often looking steadily for hours together at it, as if it imparted to them inexpressible pleasures.

The following interesting letter, relating to the diet and habits of the people who live in the goitreous valleys of Switzerland, France, &c., is from Prof. Lesquereux, our justly famed fossil botanist. He is at home among the Alps, and is perfectly familiar with all the habits and customs of this interesting people. His statements, therefore, are particularly valuable in this relation, as they, taken in connection with the observations and experiments here given, render it highly probable, if not certain, that the goitreous diathesis originates entirely from the vegetable diet of the people, aided by those meteorological conditions which favor the development of low cryptogamic forms.

COLUMBUS, O., 9th January, 1864.

Dr. J. H. Salisbury:

MY DEAR SIR:—I am sorry that I am not able to answer all your inquiries concerning the symptoms generally accompanying the appearance and development of the goitre. I studied this peculiar sickness rather as a naturalist, than as a doctor would do it; rather trying to analyze the peculiar causes of its appearance, than to analyze the various modifications to which different parts of the body are subjected. You want to know:

1. In what part of the country of Switzerland the goitre is mostly prevalent?

2. What are the habits of the people generally attacked by it?

3. To what causes is the sickness generally attributed?

1st. The goitre is mostly prevalent along the rivers, and at the bottom of some deep valleys of the Alpine mountains. I have observed it especially in the *Canton Vallais*, along the valley of the Rhone, from Lion to St. Maurice. I have seen it also in the Jura Mountains, near Montbeillard, in Franche-Compte, and also in some part of Savoy, especially in the Valley d'Aorta. The goitre does not attack the inhabitants of the mountains or of the high valleys of Switzerland. The valley of the Rhone presents a peculiar appearance. It is so deeply incased in high chains of mountains, that, in winter, the sun does not reach the bottom at some parts near St. Maurice, for example; and that in summer, the reflection of the sun by the surrounding walls of rocks, causes the heat to be excessive. In winter time, and also in the fall, the valley is generally and constantly covered with a deep fog. Even in summer time, as soon as the sun is down, the fog covers some part of the valley for the night.

The inhabitants of the Canton Valais, or Valesia, who live in high val-

leys, or on the slopes of the mountains somewhat above the Rhone, are not subject to the goitre, as I said above. These generally have a splendid development of the body and the most healthy appearance.

It may be remarked also, that along the valley of the Rhone, the goitre is mostly predominant among the inhabitants belonging to the Catholic faith. Thus, from St. Maurice downwards, the left side of the valley is Valaisian, and Catholic—and there the goitre is very predominant. The right side belongs to the State of Vaud, and is Protestant. There are still some cases of goitre deformation, but no Cretinism whatever. This Cretinism appears to be the extreme point of development of the goitre. It is a kind of bodily deformity, accompanied with idiotism, presenting the most disgusting appearance. The Cretins are born idiots—generally from individuals either Cretins, or affected with the goitre in its utmost development. They all bear a goitre of an enormous size—sometimes descending on their stomach. They are of short size, no more than four feet high; have a wrinkled, yellowish pale, cadaverous skin, generally covered with a coat of filth; some are blind, or deaf and dumb; some have the itch, or other ulcerous affections. Their eyes are red, protuberant, and far between; their mouths generally open, and outrunning with saliva; most of the time the tongue is pending; the visage flat and blue, the front very narrow and backward. They live in filth, are voracious, lazy and lacious. They intermarry, and generally live on the charity of the people.

2d. The inhabitants of the valley of the Rhone are poor. Their only industry consists in the cultivation of vineyards and of small farms. They are all of the Catholic faith, lazy and dirty. The poor ones mostly live on a kind of very black bread made with the flour and bran of oats. They eat very little meat, if any, drink water and some of their acid wine, but no alcoholic liquors. Higher up in the mountains, and on their slopes, the inhabitants are richer, with their fine pastures and large herds of cows. Their industry of cheese making is remunerative. These live especially upon milk in its various decompositions and preparations, and have no goitre. They are the most beautiful, kind and good people that it is possible to find. In the Swiss Jura Mountains, the poor of the inhabitants live mostly on *goats' milk*; and though they are not very clean, they have no trace of goitre, even in the deepest valleys.

3d. The essential causes of the formation of *goitre* (of course, I speak, causes appreciable to common observation) is the dampness of the atmosphere. This cause is not simple; it is confined with the filth in which the poor inhabitants of Valesia are generally living, and their poor and bad food. The sickness was at first attributed to water. But as the inhabitants of the mountains drink the same kind of water as those of the valleys, and have no *goitre*, it is obvious that water has nothing to do with the development of the goitre. A damp atmosphere *can also not be considered as the sole cause of the sickness*; for on the right side of the Rhone, below St. Maurice, the inhabitants who are thrifty, rich and clean*—a Protestant population—have scarcely any goitre, and no Cretins whatever. *In Franche-Comte, near Montbeillard, on the contrary, the locality where I have also seen the goitre, is not a deep valley, and there the dampness of the atmosphere cannot be considered as the essential cause. But here the inhabitants are proverbially filthy, lazy, and poor of course. The women cultivate some patches of corn. Corn meal, prepared in a kind of porridge,*

* Prof. Lesquereux tells me, that this Protetant people use more of a meat diet than the poorer class on the opposite side of the river, the food of which is almost entirely vegetable

being their essential and, sometimes, their only food. This part belongs to France

The Swiss Government has done much—not only to promote researches concerning the cause of the goitre and of the Cretinism, but also to find the means of curing the poor idiots of Valesia. A kind of hospital has been established under the management of a celebrated doctor, in a high open valley of the Alps. There good food, exercise, cleanliness and education have done much, if not to extirpate this plague, at least to alleviate and diminish its influence.

The inhabitants of Valesia, and of the countries where the goitre is prevalent, do not appear to lose anything of their strength, health and external appearance by the mere development of the goitre. I have seen most beautiful women and men, of the finest and most healthy growth, attacked by it. Even in some valleys of the Pyrenees and of the Alps, where the goitre is general, the inhabitants who are not attacked by it are looked at and pitied as a kind of cripples, or of deformed beings, because they do not bear under their chins this appendage—probably considered as some pleasant apparel.

I could write you much more on the subject; but I think that this letter is long enough. Should you want an answer to some other questions, I shall be always glad to tell you what I know on the matter.

Very sincerely yours,

LEO LESQUEREUX.

Treatment.—The thereapeutic means resorted to in treating successfully other forms of diarrhœa, have no permanent good result in this. It seems thus far to have defied the medical skill of all armies, from the very fact that its true cause and pathology have not been carefully studied and made out. To-day a prescription is administered, which for the time appears to produce beneficial results, and the surgeon flatters himself with the hope that he has at last discovered the true therapeutic combinations that control and cure the disease. He administers them in another apparently parallel case, and is disappointed in getting, either no response, or perhaps none that is favorable. By this time, perhaps, his patient, who had been apparently improving under the remedy, begins to get worse. His faith is shaken, and prescription after prescription is resorted to, but always finally with the same unsatisfactory result; and eventually when his patient gets much reduced he falls back on dietetic treatment and nursing, and finds that under this plan the sick man fails no faster, really, than when under the daily influence of medicines.

The almost universal remark is, that the disease does not respond to remedies. That with or without treatment, to-day it will be better, to-morrow worse, this week improving, the next reducing the patient lower than ever.

The reason of all this uncertainty is, that the true cause and pathology of the disease are unknown to the practitioner, and of course all the plans of treatment must be empirical. He may hit upon some good remedial means for answering certain conditions of the disease, but others not being met his treatment fails.

From the previous observations, experiments and microscopic researches the exciting cause, the resulting conditions and pathological lesions and complications appear to be evident. The plan of treatment indicated, is first to *remove the cause*, next to correct the abnormal actions in the alimentary canal, and in the sytem generally, and finally to aid nature in repairing the various lesions produced, and in restoring the normal tone of the affected parts.

The first indication, then, is to change the fermentative amylaceous food to a varied, easily digested albuminous animal diet, with which is mixed a small quantity of non-amylaceous vegetables. The next, to check fermentation in the alimentary canal and remove the layer of yeast adhering to the intestinal walls, and to get rid of the fermentative state excited in the epithelial tissue; to correct the saccharine or glycogenic conditions of the secretions and system; and lastly, to repair the lesions and restore the normal tone of the alimentary canal, lungs and heart, produced by causes and conditions favoring zymotic development.

In the early or acute stage of the disease, a simple albuminous animal diet, preceded by a cathartic dose of Rochelle salts, with the moderate use of the vegetable acid salts of potassa and iron in dilute solutions, is, in most cases, all that is necessary to rapidly cure the disease. In the chronic stage, after the appearance and development of colloid matter in the feces, the treatment should be extended to meet the alimentary and other abnormal conditions; although even in this stage, an albuminous animal diet of beef and chicken essences, teas and soups, and soft-boiled eggs, oysters, etc., preceded by a cathartic dose of Rochelle salts, to clean out the intestinal ferment, and followed by the free use of dilute solutions of the vegetable acid salts of potassa and iron, are all that in many cases are required. If fermentation continues, bloating the stomach and bowels evenings and nights, a dose of dilute sulphuric acid should be administered before supper and bed time. Others require a more extended treatment to meet the abnormal lesions produced in the alimentary canal and excited in other important organs; as the lungs, heart and nervous system.

The first indication in such cases, after removing the intestinal ferment is to keep the parts well lubricated; to allay irritation as much as possible and to gently promote intestinal secretion and absorption. The bowels are kept constantly lubricated with the following emulsion:

R—Ol. Olivae, ʒii.

Ol. teribinth. ʒii.

Gum acacia.

Aquæ aa, ʒviii., to make emulsion.

S. Dose—A tablespoonful morning, noon and night.

To allay irritation, the following suppository is used:

R—Pulv. opii., 1 gr. x.

Butter cocoa, ʒiss.

Melt, stir well together and run in moulds, so as to make suppositions x.

S. Use one every night on retiring, and in cases of extreme irritability of the rectum and colon, use one night and morning.

To promote intestinal secretion and absorption, and to excite the flow of urine, give as follows:

R—Rochelle salts, ʒii.

Aquæ, ʒxvi.

M. S. A tablespoonful, morning, noon and night, in half a glass of of water.

It is seldom that a case is met with that will not yield to the foregoing simple dietetic and remedial means. In extreme cases, where there are grave lesions and abnormal conditions that do not yield to these means, I have used with marked benefit the following prescription, which seems to operate beneficially in producing an alterative influence in the system and alimentary epithelial surfaces. It also excites hepatic splenic and

mesenteric activity, thereby relieving the clogged-up portal vessels and congested intestinal capillaries:

R—Potass. Bromide, ʒss.

Bromine, gtt. x.

Ext. Nux Vomica, gr. iii.

Aquæ, ʒviii.

M. S. A tablespoonful every four to six hours.

In addition to this, the following should be given:

R—Either citrate, super citrate, acetate or bitartrate of potassa, ʒi-ii.

Aquæ, f ʒviii.

M. S.—One ounce every two to four hours through the day.

If fermentation continues to recur during the evening and night, a dose of dilute sulphuric acid or sulphite of soda, or nitro muriatic acid may be given about an hour before supper, and another previous to retiring. It will be well to use one of these anti-fermentative remedies daily, as above indicated, as long as there is any trace of fermentative tendency. A dose, especially either of the former or latter, will check, usually, the fermentation readily. Dilute nitric acid answers also a good purpose, given in the same way as the sulphuric. Ten grains of pulverized nutmeg, two or three times a day, or sweet spirits of nitre are also good anti-fermentative remedies.

About once in seven to ten days the above treatment should be suspended, and during the interval a dose of Rochelle salts (preceded, if properly indicated, by a mercurial, to promote hepatic secretion) administered for cathartic and diuretic purposes. The former prescriptions should then again be resumed after an interval of three or four days, and continued and discontinued as before. The patients should be kept as strictly as possible on a variegated and easily digested albuminous animal diet, with which may be mixed a small quantity of non-amylaceous vegetables, and be allowed to exercise in the open air whenever their condition will permit.

They should take a warm saline bath twice a week, and occasionally be sponged with whisky. Patients affected with this disease should be placed in wards by themselves, where they can receive special attention in medical treatment, diet and exercise. Where there is a malarial influence in the system, quinine may be freely used in addition to the foregoing means. It may be given alone or combined with iron when there is much anæmia. In obstinate cases, inunctions of iodine, or the application of its tincture to the surface of the abdomen frequently results in marked benefit.

Dr. Hayes, so well known as a successful Arctic explorer, and who is surgeon in charge of the Saterlee U. S. A. Hospital, West Philadelphia, of 3,000 beds, has had large experience in scorbutic diseases. He has had, also a large number of cases to treat in the West Philadelphia Hospital of chronic diarrhæa, contracted in the Peninsular campaign, and is satisfied that there is a scorbutic condition of a peculiar type to be attended to in this disease, and which is one important cause of the obstinate character of the complaint when treated with the usual remedies and diet for ordinary diarrhæa. He has treated the disease, thus far, more successfully than I have found it treated in any other hospital either east or west.

DIET IN CHRONIC DIARRHŒA.

The diet should be as strictly albuminous as possible; avoiding all dry, amylaceous food, with beans and peas. The food should be reduced

to solution, or as nearly so as may be, so that the alimentary canal will have as little as possible to do in digesting it. Chicken and beef essences and soups, and oyster soup, and soft-boiled eggs, with milk, and also non-amylaceous vegetables, in small quantities, should make up the important materials of the diet list. Where soups are made from either chicken or beef, or oysters, the material should be chopped fine (even the oysters), then placed in cold water and brought gradually and slowly to a boil, and finally boiled thoroughly, so that even the solid portions, not dissolved, fall in pieces. A soup made in this way will contain a large amount of nourishment in solution, and will be in a condition to be readily and easily taken up and assimilated without causing unnecessary irritation of the highly diseased lining of the alimentary canal. The patients should not be allowed to overload their stomachs. They should be controlled, so as to take at any one time only a moderate quantity of food, and, if necessary, repeat the feeding frequently. If there is any fermentation and generation of gasses in the stomach and intestines evenings and nights, dilute sulphuric acid should be administered before supper and previous to retiring. For further particulars, see foregoing treatment.

While carrying on my examinations at Dennison, U. S. A. G. Hospital, in November last, I obtained permission from Dr. Cloak, the efficient Surgeon in charge, to remove the most obstinate cases of chronic diarrhœa into a ward by themselves. Ward 30, in Dr. Palmer's division, was cleaned and set apart for this purpose. Nov. 19, nineteen obstinate and well marked cases of the disease of long standing were removed into the ward, and placed on an albuminous diet, and on anti-scorbutic and anti-fermentative remedies. The ward was placed in the charge of A. A. Surgeon Palmer. On Dec. 22 I received a report of these cases, which had been under treatment 28 days.

For the purpose of showing briefly the good results obtained from the use of an albuminous diet, etc., I here insert the following letters:

DENNISON U. S. A. GENERAL HOSPITAL,
Camp Dennison, O., Dec. 20, 1863.

DEAR SIR:—I inclose you Dr. Palmer's report of the diarrhœa ward. The treatment is highly satisfactory. Let us hear from you.

Truly your friend,

B. CLOAK,
Surgeon in Charge.

DR. SALISBURY.

The following statements are from Dr. Palmer's Report, referred to in Dr. Clark's letter:

DENNISON U. S. A. HOSPITAL, }
Dec. 17, 1863. }

SIR,—The following is a report of those cases of chronic diarrhœa, examined by you. * * * * * (The detailed report of the cases is omitted.)

I am pleased with the use of an albuminous diet in chronic diarrhœa. It undoubtedly has had much to do with the successful treatment of the above cases. I like it far better than the farinaceous.

All these cases were confirmed chronic diarrhœa. The results obtained met my expectations. An improvement was manifested in every one of the 19 cases. * * * *

The Transfer Board for the Invalid Corps, has just examined Ward 30, and taken several of its number for First and Second Battalion duty; so that I will be unable to report further into the condition of their cases. A few will be fit for their regiments. Hoping to hear from you soon,

I remain, most respectfully,

Your obt. servant,

CHAUNCEY D. PALMER,

A. A. Surg. U. S. V.

DR. SALISBURY.

PROPHYLACTIC MEASURES.

If soldiers could be provided with a plenty of *desiccated beef and vegetables*, and *less army biscuit* on their marches, and on all occasions where they cannot cook meats, affording more of an albuminous diet, they would be much less liable to constipation and the resultant fermentation of the alimentary materials, and consequently less subject to the exciting causes of the so-called chronic diarrhœa.

The experiments thus far with army biscuit in producing chronic diarrhœa, have been most highly successful and confirmatory. It, when used as the sole or principal food, produces the same train of symptoms, kind of stools, conditions of the system, and complications, as are characteristic of chronic diarrhœa.

The causes we will here briefly enumerate:

1. Too large a proportion of dry, amylaceous matter in the food for healthy alimentation.

2. This dry, amylaceous food invariably tends to produce constipation, when too largely used.

3. The farinaceous matters remaining in the alimentary canal an undue time, fermentative changes set in, and gradually increase from day to day, if the cause be not removed, and eventually there is produced a highly saccharine or glycogenic condition of the system.

4. Cryptogamic (yeast and alga) plants are developed in vast numbers in the alimentary canal, germinating large quantities of carbonic acid, which, with the ferment organisms, act as a peculiar irritant poison and cathartic; as is evidenced from the cancerous state excited in the alimentary membranes, the character of the discharges, the paralytic tendencies produced, and the disposition excited to tuberculosis, thrombosis, and embolia.

The prophylactic measures indicated are plain. They are either to avoid, to remove, or counteract the cause, and may be briefly stated as follows:

1. Change the dry, amylaceous diet to one that is more albuminous, and which is less liable to produce constipation, and when it does produce this condition, less disposed to fermentative changes that develop yeast and alga plants and carbonic acid. The *desiccated beef and vegetables* makes a very palatable, concentrated, portable, cheap, appropriate and condensed form of albuminous food, that actually requires no cooking, and which could be supplied the men on marches, and whenever they are so placed as to be unable to carry and cook meat and vegetables.

2. The men should not be allowed to become constipated, and retain food an undue time in the alimentary canal.

3. The fermentative condition, in the alimentary canal, should not be allowed to gain an ascendancy. Whenever flatulent tendencies manifest themselves, especially during the evening and night, some one of the anti-

fermentatives, mentioned under the treatment of the disease, should be administered before supper and previous to retiring, and followed, if necessary, by a cathartic dose of Rochelle salts, to promote free secretions from the alimentary mucous surfaces.

If these simple prophylactic means were strictly observed, and followed out in detail, there is the strongest evidence for believing that chronic diarrhoea, with all its grave complications, would become a rare disease in armies.

Present Army Ration in the Field, and its modification to meet the emergencies of active campaigns.

PRESENT ARMY RATION.

Daily Ration for	100 men.	1 man.
Pork or Bacon.....	75 lbs. 0 ozs.	0 lbs. 12 ozs.
Or Salt or Fresh Beef.....	125 " 0 "	1 " 4 "
Soft Bread or Flour.....	137½ " 0 "	1 " 6 "
Or Hard Bread.....	100 " 0 "	1 " 0 "
Or Corn Meal.....	125 " 0 "	1 " 4 "
Beans or Peas.....	15 " 0 "	0 " 2 $\frac{4}{10}$ "
Rice or Hominy.....	10 " 0 "	0 " 1 $\frac{6}{10}$ "
Green Coffee.....	10 " 0 "	0 " 1 $\frac{6}{10}$ "
Or Roasted Coffee.....	8 " 0 "	1 " 1 $\frac{28}{100}$ "
Or Tea.....	1 " 8 "	0 " 1 $\frac{24}{100}$ "
Sugar.....	15 " 0 "	0 " 2 $\frac{4}{10}$ "
Vinegar.....	8 " 0 "	0 " 1 $\frac{28}{100}$ "
Adamantine or Star Candles.....	1 " 4 "	0 " 1 $\frac{1}{2}$ "
Soap.....	4 " 0 "	0 " 1 $\frac{6}{25}$ "
Salt.....	3 " 12 "	0 " 1 $\frac{6}{10}$ "
Pepper.....	0 " 4 "	0 " 1 $\frac{1}{25}$ "
Potatoes.....	30 " 0 "	0 " 4 $\frac{8}{10}$ "
Molasses.....	2 " 0 "	0 " 2 $\frac{8}{5}$ "

This makes a substantial and good diet, save that the army biscuit part of it is entirely too large, so long as the men are in a position to avail themselves of the means of transporting their food and cooking their meat and vegetables. At such times, however, the men are in camp, and not exposed to the hardships and fatigues of military life. But as soon as they are deprived of these means by active duty in the field, in the way of long marches, they are thrown often entirely upon a dry army biscuit diet, and this at the very time when their systems, overtaxed with arduous and fatiguing duties, require the most nourishing food to support and sustain them. This diet affording but a part of the normal constituents of healthy alimentation, the men on it soon begin to show signs of enervation, and the long train of abnormal symptoms previously described. Here is evidently, at the precise period when the soldiers require the best of nutrients, an important link in their alimentation left out. The very bone, muscle, and nerve of their food are wanting. Can these be readily supplied? We answer, yes! Our desiccated *beef and vegetables* furnish albu-

minous and vegetable food of the finest quality, that do not necessarily require cooking, and which are so condensed, by being deprived of water (a useless material), that the men can carry 5 to 6 days' rations of these materials as easily as they now carry one, of their ordinary food. Upon such food the men can travel, and endure hardships and exposures, without becoming enervated and diseased.

We here introduce the ration modified, so as to meet the emergencies of active campaigns:

ARMY RATION FOR ACTIVE CAMPAIGNS.

Daily ration for—	100 men.		One man.	
	lbs.	ozs.	lbs.	ozs.
Desiccated beef and vegetables.....	25	0	0	4
Hard bread or army biscuit.....	25	0	0	4
Roasted coffee.....	8	0	0	1 $\frac{2}{3}$
Or tea.....	1	8	0	2 $\frac{4}{5}$
Soap.....	4	0	0	1 $\frac{6}{10}$
Salt.....	3	12	0	1 $\frac{3}{5}$
Pepper.....	0	4	0	1 $\frac{1}{2}$

This is a good ration, upon which the men have all the constituents required for healthy alimentation. It furnishes the system with all the nutrient materials necessary for the healthy support of the tissues of the body, when the men are exposed to the fatigues and hardships of the campaign.

With roasted coffee, the daily ration per soldier is $10\frac{7}{10}$ ounces. With tea, $9\frac{7}{10}$ ounces. Thirty days' rations with coffee weigh $19\frac{1}{10}$ pounds. Thirty days' rations with tea weigh $17\frac{3}{10}$ lbs. Twenty days' rations with coffee weigh $13\frac{1}{5}$ lbs. Twenty days' rations with tea weigh $11\frac{3}{5}$ lbs.

The 4 ounces per man per day of *desiccated beef and vegetables* is equivalent to ten ounces of pure lean beef, freed from all bone and fat, or fifteen ounces with the bone, and twenty ounces of fresh vegetables. This with the four ounces* of army biscuit, coffee and condiments, make up an ample diet for a soldier undergoing the fatigues and labors of campaigning.

The present daily ration, with beef and coffee, weighs 3 lbs. and $9\frac{8}{10}$ ounces. With bacon it is eight ounces less. With beef, therefore, one ordinary ration weighs as much as $5\frac{4}{10}$, or in round numbers, five and a half days' rations of the desiccated food. The men could carry in their haversacks, of the desiccated food, twenty-seven days' rations more easily than they could carry the ordinary ration for five days. The advantage in favor of the former, so far as portability and bulk are concerned, is so great that thirty days' rations of it would not be as bulky and burdensome as would be the ordinary cooked ration for five days.

In executing rapid and long marches, the present ration cannot be carried in full on account of its bulk, want of portability, and weight. The result is that after the first three or four days the soldiers are thrown almost entirely upon army biscuit and coffee. This soon produces constipation and flatulence, which sooner or later results in so much alimentary and systemic irritation and derangement, that diarrhea ensues. This, if allowed to continue for any length of time, becomes an obstinate disease.

Beans and peas, when fed upon to any extent and persisted in, are a

* Dr. Hayes, the arctic explorer, issued to his men in the cold northern regions, only two ounces of the hard biscuit, with the four ounces of desiccated beef and vegetables per day per man. This he regards as ample. See his letter further on.

grave cause of alimentary irritation and diarrhœa. Like army biscuit, they at first produce constipation and flatulence, which if the food be continued to be used too exclusively, soon results in diarrhœa. Every one is familiar with the almost immediate tendency of this kind of food to produce flatulence. In our soup houses in the large cities, where soup is daily prepared during the winter for feeding the poor, *beans and peas* enter largely into its composition. This diet excites in those who feed too exclusively upon it, diarrhœic conditions, which are frequently obstinate in their character.

Any one kind of animal food when subsisted upon too exclusively, results in scorbutic conditions, which finally present diarrhœic tendencies. With this kind of food, however, the external surface of the body and mouth frequently are the first to exhibit marked abnormal states; while with amylaceous and leguminose food, the mucous membranes are the first to present striking derangements and lesions.

100 lbs. of desiccated beef and vegetables are made up as follows :

100 lbs. of desiccated beef and vegetables are composed of—	Desiccated beef, free from bone and fat, 50 lbs. ;	250 lbs of pure fresh beef, freed from bone and fat; or 375 lbs. of beef containing bone and fat,	375 lbs. beef and 425 lbs. of vegetables. } 800 lbs. of fresh food.
	and Desiccated vegetables, 50 lbs. ;	and 425 lbs. of fresh vegetables ;	
	or 7 lbs. of desic. onions.	or 105 lbs. of fresh onions.	
	30 " potatoes.	180 " potatoes.	
	13 " cabbage ; which are equivalent to—	140 " cabbage ; which equals—	

We here see that this desiccated beef and vegetables has in one pound : 8 lbs. of fresh food, $3\frac{3}{4}$ lbs. of which is beef, and $4\frac{1}{4}$ lbs. vegetables. The beef is freed from bone and extra fat, cooked, cut fine, and carefully dried at a low temperature, so as to not destroy its flavor. The vegetables are sliced or cut fine, and carefully dried at a low temperature, so that all the fine flavor is preserved, the potatoes being previously cooked while the onions and cabbage were dried raw. After all are thoroughly dried, fifty pounds of the desiccated meat, seven pounds of the desiccated onions, thirty pounds of the desiccated potatoes, and thirteen pounds of the desiccated cabbage, making in all one hundred pounds, are mixed together intimately, and eight pounds of the mixture placed in a hydraulic press, and with five hundred tons pressure forced into a tablet one foot square and one inch thick. The tablets formed in this way are placed nine in a tin can, and two cans in a wooden case.

When these tables are ready for being coated with gelatine they can be cut through the centre, making two tablets of one. These half tablets measure twelve by six inches, and are of a convenient size for packing in the haversacks of the men. Each half tablet weighs four pounds. They are coated with gelatine to prevent the absorption of moisture, till required for use.

The cost of this food per pound will not exceed forty-eight cents, one-fourth pound, twelve cents. It will hence be seen that this kind of food, when the expenses of transportation are deducted, will cost less than the ordinary ration.

The American Desiccating Company of New York, (56 South Street) have works at Williamsburg and Newburg, N. Y., and are able at present to turn out of this kind of food, 150,000 pounds per month, and by spring could increase their capacity to 200,000 pounds per month. 150,000 pounds per month is 5,000 pounds per day, which is sufficient for 20,000 daily rations. 200,000 pounds per month is 6,666 $\frac{2}{3}$ pounds per day, which is sufficient for 26,666 $\frac{2}{3}$ daily rations. This would probably be sufficient to supply the army for the present, while engaged in active campaigns. If not, other works could be soon constructed for the purpose which could furnish the desired supply.

While armies are in camp, or when they can have the facilities for cooking and transporting their food, the ordinary army ration—with one-half the present quantity of army biscuit—could be issued. The army biscuit should be lessened, as the present amount makes by far too large a proportion of amylaceous food in the ration for healthy alimentation. *Peas and beans should be entirely excluded.*

The following interesting statements, bearing upon this subject, are from Dr. J. J. Hayes, the Arctic Explorer, who has had large experience in observing the conditions under which scorbutic states are developed, and during his last expedition he was entirely successful in preventing the appearance of this disease among his men :

SATTERLEE U. S. A. GENERAL HOSPITAL,
WEST PHILADELPHIA, Dec. 14, 1863.

My dear Sir—I take great pleasure in answering your questions.

During my first voyage with Dr. Kane, scurvy was very prevalent among the crew. This was attributed mainly to a diet consisting of the ordinary *Navy Ration*; the meat being wholly salted. But little game was obtained.

During the expedition which I commanded in 1860 and '61, we had no scurvy. This was, no doubt, chiefly owing to the abundant supply of game which our guns brought us. Reindeer, foxes, and water fowl, were found in great abundance. I believe, however, that we should have escaped without any symptoms of that terrible disease had we had been obliged to subsist on the supplies which we took with us from home—the most useful of which was the *dessicated beef and vegetables*, prepared by the American Dessicating Company in New York. This preparation is made by mixing together equal parts of perfectly dried beef and vegetables. The vegetables used were chiefly potatoes, onions and carrots. The mixture was compressed by hydraulic pressure into solid cakes—four pounds in each. Except a small allowance of *ship biscuit* (two ounces per man per day) this was my only food when traveling with dog sledges over the ice.

On one of my journeys I was absent sixty days. There were four of us in the party; and our two sledges were drawn, each, by seven dogs. The food of men and dogs was the same; and nothing could better suit such traveling in a region where every extra pound is of importance.

I will give you our equipment. Each person had a small buffalo skin, and an extra pair of boots, stockings and mittens. Total weight of extra clothing, for four persons, 30 pounds. A lamp, a kettle, four cups and as many spoons made up our mess furniture. Total weight 6 lbs., or in all 9 lbs. per man; and this in a temperature varying from zero to 68° below it. We had a pot of coffee night and morning, and one pound of dessicated beef and vegetables gave the four of us two good meals per day; that is $\frac{1}{4}$ lb. to each or $\frac{1}{8}$ lb. per meal. Occasionally we required a larger quantity, but never more than half a pound per man per day. We carried no

tent, but slept always in a snow hut, for the building of which we carried only a slight shovel. We had, of course, no fire, other than our small lamp for cooking; and this, owing to the smoke, could not be used in the hut. We did not suffer materially from the cold, and none of us were even frost bitten.

I am much surprised that these dessicated meats and vegetables are **not** used extensively in the army. I paid for the *dessicated beef* 60c. per lb. (1860); for the *dessicated beef and vegetables*, 45c. per lb.; and for the dessicated vegetables alone, about 30c. per lb. So you see it is not costly. A soldier could carry in his breeches pockets food enough to last him a week. A four pound cake, stuck in his haversack, would at least last him eight days, and with economy a much longer period. I have lived on one 16 days.

If I were to organize an army I should first build a dessicating establishment, and would sell my commissary wagons to pay for it. The army might then trust to its legs and not to wheels, and would be less liable to be impeded by mud and poor roads.

The larger part of our food, consisting of water, is removed by this dessicating process; and thus 6 lbs. of meat is reduced to one, and vegetables nearly 20 to one; without depriving either of any of their nutrient qualities. The soldier, on the march, can always find a stream, spring or well, from which the needed water may be supplied to swell his beef and his vegetables to their natural size; and wherever there is a fence or a tree he can have a fire to cook his soup, the most refreshing and most useful form in which a soldier or a traveler can prepare his food. If it should so happen that the means for cooking are not at hand, he can eat his little lump of hard food, drink a pint or so of water, and sleep without hunger or indigestion. The food is not unpalatable in its raw state; and I know from practical experience, that it will sustain life as well without ever having seen the fire or pot.

I know that you will agree with me that neither the soldier nor the traveller should seek comfort or luxury in the field; these he may have at home, where they belong.

Believe me, my dear Sir,
sincerely your friend,

J. J. HAYES,
Surgeon U. S. Vols.

Dr. SALISBURY, Girard House, Phila.

Here we have a practical test of this desiccated food in campaigning; showing that it sustains the strength of the system admirably, and protects it perfectly against scorbutic maladies—the constant and dreaded scourge of armies—which have more to do in weakening and decimating them than the necessary accidents of battles, combined with all other diseases. It is a remarkable fact, that at present over 20 per cent. of the rank and file, in every campaign of any extent, are found on the sick list from bowel and other derangements of a scorbutic origin, or arising from defective alimentation. The officers are for the most part exempt from these diseases, for the simple reason that they are able to carry food and means for cooking; and consequently have that variety of food the system requires for healthy alimentation, and to nourish and sustain it under the fatigues and hardships of the march. This is a matter which should have the earnest and careful consideration of those in authority, as early as possible, that arrangements may be made to supply the proper amount and kind of desiccated food to the army by the early spring campaigns.

The lines of communication are now becoming so extended, and the means of transporting food so bulky and cumbersome, that with the old army ration celerity of movement and health are both out of the question. This we have learned by a long, bitter and expensive experience. How different it would be if all the cumbersome commissary trains could be dispensed with; each man taking in his haversack and pockets 30 days rations; which, with dessicated food, could readily be done without overloading. If the lines of communication should then happen to be cut for a few days, it would not interfere with forward movements. The importance of this matter, at this time, cannot be overestimated, both as a military and sanitary measure.

RESUME.

The following is a brief summary of many of the interesting and important results arrived at in this inquiry :

1. Vegetable food, and especially that of an amylaceous and leguminose character, when too exclusively and continuously used, produces fermentative and scorbutic conditions.

2. These conditions show themselves in the following abnormal states, viz.: in the formation of fibrinous masses (embolia) in the capillary vessels of sensitive, irritated and irritable parts, resulting in congestions, inflammations, diarrhœa, paralytic tendencies, loss of voice, and diseases of the eye and ear, with pains and aches in the extremities and back, and also a disposition to cell development, from which results tubercular depositions in the lungs.

3. The abnormal conditions excited by an amylaceous and leguminous diet, require, as dietetic and remedial means, albuminous animal food, instead of vegetables, with anti-fermentatives for controlling zymotic action; in connection with which are indicated the vegetable acid salts of potassa and iron, for promoting the solution of the fibrinous clots and thinning the blood, and promoting intestinal epithelial activity, absorption and secretion.

4. These conditions are developed mostly during and immediately following campaigns, where the men are confined too exclusively to an amylaceous diet.

5. The officers who can and do carry a variety of food, with means for cooking it, are exempt from this class of diseases.

6. The first manifestation of abnormal tendencies, after beginning to feed too exclusively upon amylaceous or saccharine food, or on any of the products of their fermentation, is constipation.

7. This constipation is soon followed by fermentative changes, and the development of intestinal gases and yeast plants in the food too long delayed in the alimentary canal.

8. That as soon as gases begin to develop in the intestinal canal, yeast plants begin to form in the alimentary matters to an abnormal extent.

9. That this development of yeast plants is evidence of the inauguration of fermentative changes in the amylaceous food.

10. That this fermentation and development of yeast plants continue to increase till diarrhœic conditions are produced.

11. That a peculiar gelatinous, algoid matter—usually in little masses scattered through the feces—shows itself, to a greater or less extent, as soon as the diarrhœa commences. That generally this algoid (colloid) matter is present in direct proportion to the severity of the disease.

12. That this algoid development is not the cause of the diarrhœa, but merely the consequence of certain saccharine and fermentative conditions of the system, in which state the alimentary canal becomes a proper nidus for its development. As soon as these systematic conditions are overcome, this algoid vegetation ceases to develop, and disappears entirely from the feces. It hence may be regarded as merely the consequence, and not the cause, of certain systemic conditions. Its development appears, however, to act as a poison, and increases the intestinal lesions.

13. That the system on this amylaceous diet, becomes highly saccharine and fermentative, so that even the mucus secretions often contain sugar, and rapidly pass into fermentative states, developing yeast plants,

14. That this saccharine condition is abnormal, and appears to be a peculiar type of the so-called *scorbutic taint*, and yields more readily to an *albuminous animal diet*, with anti-fermentatives and the vegetable acid salts of potassa and iron, with iodine in small, frequent and unirritating doses, than to any other dietetic and remedial means.

15. The fermentative changes in the alimentary canal are always more active towards evening and during the night, and go on increasing from day to day till,

16. Finally the gases and yeast plants developed, produce so much intestinal irritation that diarrhœa ensues, which soon becomes chronic, and not at all amenable to the treatment for ordinary diarrhœic conditions.

17. Accompanying the fermentative changes is always a paralytic tendency, more or less strongly marked. This is manifest in the alimentary canal, and especially in the large intestines—next in the extremities—the legs prickling and “getting asleep” frequently, with ringing in ears, and a numb, mixed-up, confused feeling in head, &c.

18. This paralytic tendency appears to arise from defective nutrition and the pressure produced by the clogging up of the capillary vessels with fibrinous masses, from which results serious congestions, &c., as in the intestinal walls, nerve-centers, lungs, etc.

19. A cough, with more or less hoarseness, usually sets in, especially during the night and on getting up in the morning, accompanied by the expectoration of a thick, sweetish, cream-colored mucus.

20. This is followed by more or less constriction in breathing, with frequently palpitation of the heart on any excitement.

21. In this condition of the system there is usually a remarkable tendency to fibrinous depositions in the heart (thrombosis), and to the clogging up of the pulmonary vessels with fibrinous masses (embolia), with tubercular tendencies and pains and aches in the extremities and back, simulating muscular rheumatism.

22. The disease so fatal in animals, known as “hog cholera,” is the same abnormal state of the system as the chronic diarrhœa of armies.

23. Both arise from the same cause, viz.: the too exclusive feeding upon amylaceous or saccharine food, or upon the products of their fermentation.*

24. The primary lesion appears to be the clotting of the blood or the aggregation of fibrinous masses in the capillary vessels and heart.

25. There is a strong probability that the conditions of the system which result in diabetes are similar to those producing chronic diarrhœa.

* The diarrhœa is but one expression or symptom out of many of the peculiar systematic abnormal condition excited by such food.

26. There is also evidence, that the conditions of the system which result in bronchocele, are similar to those which give rise to chronic diarrhœa; the former disease occurring in persons habitually subsisting too exclusively on amylaceous and vegetable food from infancy; while the latter has its origin from the too exclusive use of the same kind of food, at any period of life, in those whose systems have previously been accustomed to a mixed animal and vegetable diet.

27. There is strong evidence also, that the condition of the system which gives rise to summer complaints and fluxes in children—especially those where the stools are gelatinous (colloid) and green (the so-called colloid matter)—are similar to those that result in chronic diarrhœa. They appear to arise from the too exclusive and continued use of starchy and saccharine substances and fruits, which children are largely indulged in.

28. The colloid matter of chronic diarrhœa appears to be algaoid, belonging to some of the lowest vegetable forms.

29. That this algaoid matter is not the cause of chronic diarrhœa, but merely the consequence of certain glycogenic conditions of the system, brought on by feeding too exclusively upon amylaceous food. That after it begins to develop in the alimentary canal, it tends to exhaust the system and aggravate the lesions and the disease.

30. That sugar, vinegar, carbonic acid, and even alcoholic beverages, when too exclusively and continuously used, tend to produce similar conditions of the system, with that of amylaceous food.

31. That amylaceous and saccharine matters, with all the products of their fermentation, when too exclusively and continuously used as food, or taken into the system in any way, result in similar lesions and abnormal conditions, and tend to produce in the heart and capillary vessels, fibrinous depositions, which result in thrombosis, congestion and hepatization of lungs, congestion and inflammation of the intestinal walls, with the damming up of the blood in the capillaries that nourish the nerve-centres and extremities, resulting in paralytic tendencies, with sometimes loss of voice and diseases of the eye and ear.

32. That these make up the great mass of the most obstinate, lingering, pitiful and fatal diseases of the army, decimating it more and bringing upon it and those at home, more suffering and grief than the accidents and casualties of battles and all other diseases combined.

33. That if we would prevent these diseases, we must change the present army diet.

34. That the *desiccated beef and vegetables* makes an anti-scorbutic, anti-fermentative, highly portable, nutritious and good diet for the soldier, and could be furnished him at a cost not exceeding that of the present army ration.

35. That of this food, he can carry thirty days' rations in his haversack more easily than he can five days' rations of his present food.

36. That with this food, the heavy and cumbersome commissary trains, that so impede an army, may be dispensed with.

37. That at present, the great bulk and weight of the soldier's food is water, a heavy and unnecessary ingredient to carry, and which makes up from five to seven pounds in every six to eight, and which he can supply at the numerous springs, brooks and rivers along his march. In the desiccated food, this water is taken out, and the food compressed into a small bulk, so that he can carry six days' rations of it more easily than one of his present food.

38. That with this desiccated food, he need never be without a good

substantial diet, that will sustain him during the fatigues and labors of the march, and protect him from the numerous dreaded scorbutic and fermentative diseases.

39. That this *desiccated beef and vegetables* has already been submitted to a practical test, in campaigning, in Dr. Hayes' Arctic Expedition, and found to work admirably, as a good, nourishing, anti-fermentative and anti-scorbutic food. In Dr. Kane's Expedition this food was not used, and his men suffered much from scurvy and frost bites. In Dr. Hayes' Expedition, although he reached a more northern point than any previous explorer, yet he did not have a solitary case of scurvy among his men, nor a single frost bite.*

40. That beans and peas have a marked tendency to produce flatulence, indigestion, intestinal irritation and chronic diarrhoea, with its intercurrent derangements; and hence they should be entirely abandoned as army food. . The poor of our cities that feed upon the bean and pea soup provided for them at the public expense, are soon affected, if they live upon this food too exclusively, with diarrhoeas, which are often obstinate and protracted.

* Frost bites occur almost always in men laboring under a scorbutic taint. Those that are sound are seldom frost bitten.

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ANNUAL REPORT

OF THE

SURGEON GENERAL,

TO THE

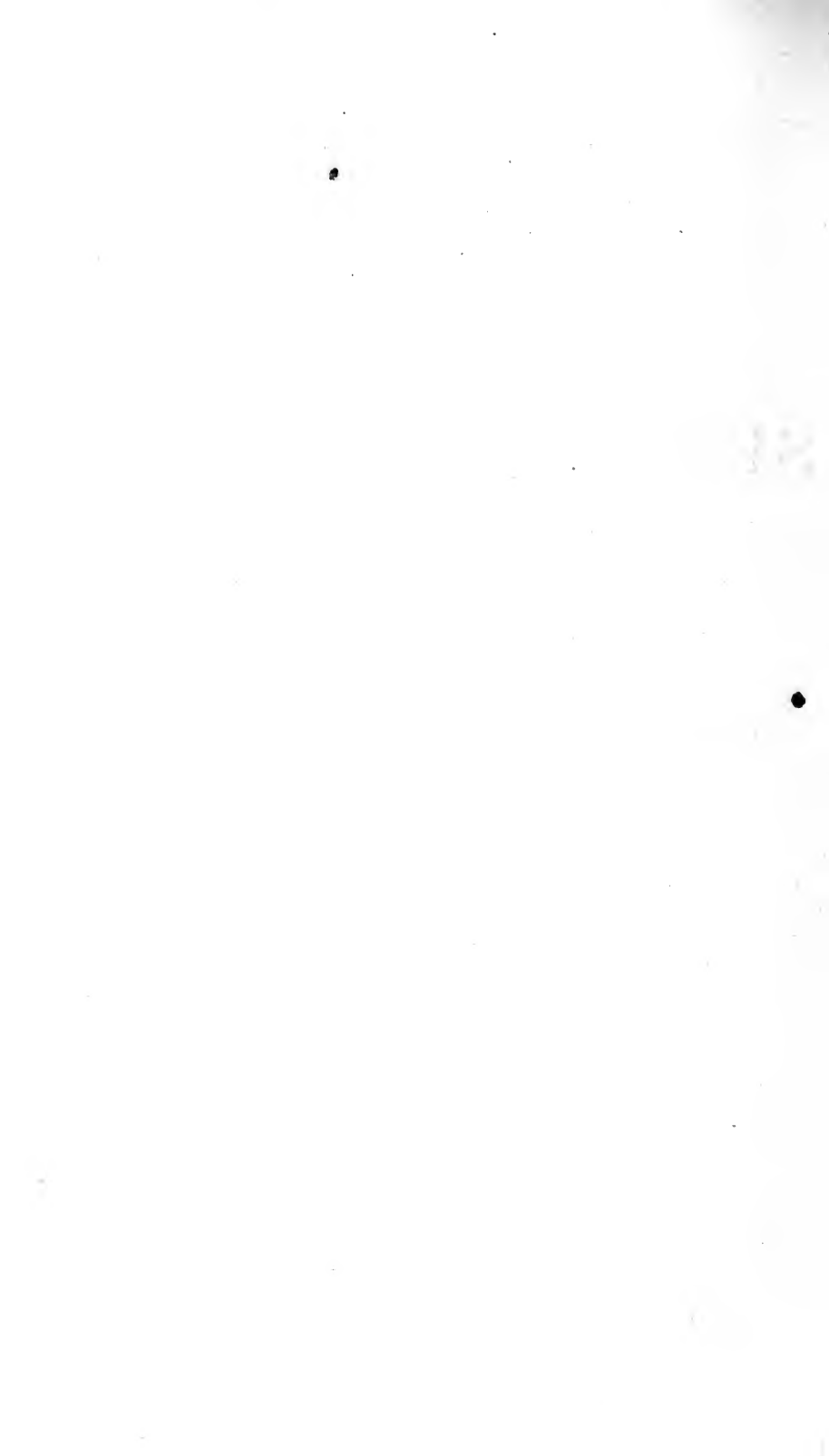
GOVERNOR OF THE STATE OF OHIO,

FOR THE YEAR 1865.



COLUMBUS:

RICHARD NEVINS, STATE PRINTER.
1866.



REPORT OF THE SURGEON GENERAL.

GENERAL HEADQUARTERS, STATE OF OHIO,
SURGEON GENERAL'S OFFICE,
Columbus, Nov. 15, 1865.

To His Excellency Charles Anderson,
Governor and Commander-in-Chief:

SIR—I have the honor herewith to transmit the report of the Medical Bureau of the State, for the year just closed, together with a brief reference to the transactions of our State authorities in the medico-military affairs, since the opening of the war.

The last year has been one of memorable interest in the history of the Great American Rebellion. During that period war has ceased to exist in our country, and millions of men who have been engaged in hostility to each other, have left the fields of combat, of blood and of carnage, and returned to the peaceful and industrial pursuits of life, as though war had never deluged the country in blood. The nation is preserved in its integrity and unity; the only stain in its original organic law wiped out from her escutcheon; and the whole civilized world has been taught that the great American Republic has the power of self-preservation, and is alike indestructible, as well from internal foes as from foreign invasion. But, while the God of nations, in His infinite mercy, has spared us as a *nation*, we have been saved as from fire, and the life-time of a generation will only suffice to remove the terrible scars of the conflict in the *devastated field, the interrupted lines of communication, of travel, and of commerce*, in the line of marches of the heavy battalions of the would-be destroyers and of the patriotic preservers of the Union.

But we have a still more sad remembrancer of the melancholy past, and a stronger evidence of the fierceness of the conflict, and the bitterness which it engendered, in a nation mourning for her sacrificed Chief Magistrate, the choice of her people, twice expressed, through the silent but eloquent and powerful ballot-box; and also by the presence in our midst of the thousands of widows, fatherless orphans, and of maimed and crippled heroes—the relics of the rebellion. It is to be hoped that a grateful people will forever keep green in their memory the patriotic and heroic dead, and through their law-making powers amply provide for the widows, the fatherless, and the disabled of the war for our national integrity.

In 1861, when the war broke out, Ohio, like most other loyal States, was without a military organization, except a nominal one. Upon Hon. William Dennison, then Chief Executive of the State, fell the duty of raising men, officering and organizing regiments.

With a full appreciation of the importance of supplying competent medical officers to accompany our soldiers to the field, he, with the sanction of the Legislature then in session, early organized a State Board of Medical Examiners. Consequently, by law none could receive a position in the Medical Staff of Ohio who had not been examined as to physical, moral, and professional qualifications, and who did not receive the unqualified recommendation of the Board.

William M. McMillan, M.D., of Columbus, was commissioned Surgeon General on the Governor's Staff, in accordance with the nominal militia law of the State. Surgeon General McMillan, however, immediately resigned and accepted a commission as Surgeon of the First Regiment O. V. I. (three months), and George G. Shumard, of Cincinnati, O., was commissioned Surgeon General in his stead; but at the end of three months he, also, resigned to accept a commission as Brigade Surgeon in the service of the United States, and Dr. McMillan was re-appointed and again resumed the duties of Chief of the Medical Bureau of the State, which he continued to fill until the expiration of Governor Dennison's term of office.

The State Board of Medical Examiners, as constituted by Gov. Dennison, consisted of the following gentlemen: George C. Blackman, M.D., Cincinnati; J. W. Hamilton, M.D., Columbus; and L. M. Whiting, M.D., Canton.

Meetings of the Board were repeatedly held at the Capitol during the first year of the war, in order to supply the demand for medical officers, created by new regiments being continually organized and sent to the field. These examinations were conducted in a manner generally satisfactory to the applicants, with the single exception that the Board arbitrarily, and without the least sanction of law, established a rule that all applicants for the position of Major Surgeon should have had ten years' and applicants for the position of Assistant Surgeons should have had five years' experience, after graduation from some respectable Medical School, in the practice of Medicine and Surgery, before being entitled to an examination by the Board as to their professional qualifications for these responsible positions. The intention of the rule was doubtless well, and its object to secure to the service the very best possible professional ability and experience; but its practical working was to debar from the Medical Staff of the army entirely all the younger members of the profession, who were equally patriotic, more ambitious for professional preferment, and better adapted for the hardships and emergencies of the service

than the older members of the profession, but few of whom could go, because of family, business relations, and obligations.

This rule had, therefore, to be early rescinded, and ever after, during the entire period of the war, notwithstanding the often-repeated calls of the President of the United States upon Ohio for new battalions and new regiments, and consequently the large drain upon the profession of the State, yet at no time, when the wants of the department were made known, was there a lack of amply-qualified applicants, not only to fill the new demands, but also to take the places of those who had fallen at their posts, or become disabled and compelled to retire from the service. By reference to General Roster, will be seen the number, name and rank of medical officers appointed during the year 1861, all of whom were recommended by the State Board of Medical Examiners, except the Surgeons and Assistant Surgeons of the First and Second Regiments Infantry (three months), who received commissions before the organization of the Board.

During the summer of 1861 Drs. Blackman and Whiting retired from the Board, the former to enter the service as Brigade Surgeon, and their places were filled by the appointment of Wm. M. Awt, M.D., and S. M. Smith, M.D., both of Columbus.

In January, 1862, Hon. David Tod succeeded Gov. Dennison as Chief Executive of the State, and, adopting the plan inaugurated by his predecessor, he organized the Medical Bureau of the State by commissioning Gustav C. E. Weber, M.D., of Cleveland, Surgeon General, and appointed as the State Board of Medical Examiners the following named gentlemen: J. W. Russell, M.D., Mt. Vernon; John A. Murphy, M.D., Cincinnati; and A. H. Woodbridge, M.D.

Dr. Woodbridge, soon after receiving appointment to the Board, resigned, to accept the Surgency of the 128th Regiment O. V. I., in which capacity he served faithfully and with distinguished ability till the close of the war.

His place in the Board was filled by the late C. C. Cooke, M.D., of Youngstown.

During this year (1862) the war swelled into such large proportions, and so sanguinary in character, as to render more medical aid necessary, and on the urgent recommendation of Surgeon-General Weber, warmly seconded by Governor Tod, the Legislature passed an act empowering the Governor to appoint fifty additional Assistant Surgeons, for Ohio regiments at large, and to be assigned, by the Medical Directors in the field, to such regiments as might most require additional assistance. The State Assistant Surgeons, whose names I append in tabular form, did much valuable service; but on account of their semi-official relation to the regular medical staff, much confusion and dissatisfaction arose. But they were soon merged into the regular medical staff and duly commis-

sioned, under an act of Congress giving an additional medical officer to each regiment.

In relation to this matter, I herewith insert a portion of Governor Tod's correspondence in relation to this and other matters, for the benefit of Ohio soldiers:

"STATE OF OHIO, EXECUTIVE DEP'T,
COLUMBUS, June 6, 1862.

G. C. E. Weber, Surgeon-General:

DEAR SIR,—There are so many matters of moment, connected with the management and welfare of sick and wounded troops from Ohio, requiring prompt attention, that I must ask you to proceed at once to Washington City, for consultation with the Medical Department of the Army.

You are so familiar with the necessities of the service, that it can hardly be necessary for me to point out specifically the difficulties we encounter in our efforts to alleviate the afflictions of our sick and wounded soldiers. A few of the more prominent obstacles only will be named to you:

1st. The service is deficient in the number of surgeons allowed to each regiment.

To obviate this difficulty, you are aware that authority was given me by the Legislature to appoint fifty State Surgeons, but, for the want of a full recognition of them by the Federal Government, their usefulness is limited. The Department should adopt them into its service, and give them the rank and pay of Assistant Surgeons. If it decline doing this, it should, at least, furnish them transportation and subsistence, so difficult to be obtained in any other manner.

You will make known to the Surgeon-General the means we make use of to obtain surgeons of high character for these positions.

2d. Secure, if possible, greater facility in the matter of furloughs and discharges from the service. I am aware that this is a most delicate matter to interfere with; for the desire of the soldier, in many instances, is to get out of the hospital, both for active duty and to escape the service, and that it requires extreme vigilance and care in the exercise of the power of discharging soldiers from hospital.

3d. The embarrassment attending the payment of soldiers confined in hospital. Stringent orders should be given to Captains and Colonels to furnish all soldiers sent to the hospitals with such descriptive rolls as would enable them to draw their pay.

4th. Explain fully to the Surgeon-General our labors and expenditures in the removal of the sick and wounded from the Tennessee and Cumberland valleys. This humane work was entered upon as gratuity on the part of the State; but the several Medical Directors have made such free use of our boats, that we can with entire propriety ask the Federal Government to contribute toward the expense.

Yours, &c.,

DAVID TOD, *Governor.*"

In compliance with this request, Surgeon-General Weber proceeded to Washington City, and was instrumental in not only having the fifty State Surgeons, or as many as so desired, transferred to the Federal service, but also in having a law pass Congress granting to each regiment of a minimum number, whether infantry, cavalry or artillery, two instead of

one Assistant Surgeon. Also, a general order requiring all soldiers absent in hospitals, or on detached duty, to be furnished with descriptive rolls, and regularly mustered for pay every two months. This order, although not always complied with, gave great relief to this class of soldiers, and enabled them with some regularity to receive their much-needed stipend. An order was also secured to remove to hospitals within their respective States, so far as practicable without injury to the service, all permanently disabled soldiers, or those requiring treatment for some considerable time. And thus a double good was secured. The disabled soldier was brought within the reach of friends—breathed again his native air, and looked upon familiar objects and faces; while the field and Division Hospitals at the front, and far from the base of supplies, were, to a large extent, relieved of that large element which is always an incubus upon an army in active operations.

With the view of accommodating the disabled from the many causes incident to a state of war, transferred from the battle-fields and hospitals at the front, as well as for troops stationed or being organized within the State, and for prisoners of war, there have been established, at different periods, within our Commonwealth twelve U. S. General Hospitals, with a total capacity of nearly six thousand beds; and at times these were more than filled, and temporary provision had to be made for the excess over the means of accommodation.

Notwithstanding the relative increase of the medical staff allowed by act of Congress above referred to, and the constantly increasing hospital facilities and conveniences, the Medical Department of the Army found itself incapable of meeting the great demands made upon it, and, without extraneous help, thousands of our sick and wounded must have suffered and perished for the want of proper care, medical and surgical aid. To afford this much-needed assistance the several States furnished timely aid of incalculable value. In this Ohio was in no respect behind her sister States. During the first three years of the war, under the calls of the Chief Executive of the State, volunteer surgeons and nurses were sent to the battle-fields, to render aid in the care of the wounded. Steamboats and cars, freighted with whatever could be of comfort or value to the suffering, were dispatched. Money and clothing without stint were freely given, both by State authority and by a generous public. At different periods no less than 14 steamboats loaded with volunteer surgeons and nurses, and supplied for the sick and wounded and dying, were sent forth, to bring to their own State such as could be removed. These were all sent to the valleys of the Cumberland, Tennessee and Mississippi, where were the majority of Ohio's sons; but our noble regiments in the East were not forgotten or neglected. Help and supplies were also sent them, as the exigencies required.

To particularize on all the different expeditions of mercy sent by State authority, and mostly under the general management of this Bureau, would render this report too voluminous. Special reports of them have been made, from time to time, to the Chief Executive, and, through him, to the Legislature and people at large.

A tabular statement of the volunteer surgeons and nurses who, at different periods during the war, gave time and services without money and without price, is herewith appended. I fear that this table does not contain the names of *all* who thus engaged in this noble work. If any one who volunteered in this labor finds his name omitted from the list, he may rest assured that it was not intentional, and that his labor of love has not been forgotten by those who received his timely assistance, or by the Great Rewarder of all good.

In addition to what has been done by State authority through this Department, an invaluable amount of aid has been furnished and good done by the U. S. Sanitary and Christian Commissions, as their own reports will show; but I desire and take pleasure in here, officially, acknowledging the value of their services, and a full appreciation of them.

The amount of money expended by State authority during the war, in supplying extra medical aid and nursing, for sanitary supplies, and in transporting sick and wounded to our State, amounts to nearly \$200,000.

In the fall of 1862, Surgeon General Weber was compelled to resign on account of ill health, incurred by overwork and exposure in the discharge of his official duties, and his place was filled by the appointment of Samuel M. Smith, M.D., of Columbus, whose extensive acquaintance with the profession of the State, and ample knowledge with the wants of the service, gained by his frequent visitations to almost all our armies in the field, in his numerous trips of volunteer aid, made his appointment eminently proper, and his services valuable to the State and general service.

Surgeon General Smith continued in the discharge of the duties of this office, until the expiration of the time of office of Governor Tod, on the 13th day of January, 1863.

For the several meetings of the Board of Medical Examiners, names of applicants, and those successful and recommended for commissions, together with names and rank of those commissioned in new and old regiments, and for deaths, resignations, and dismissals, I respectfully refer you to the tabular statements.

On the 13th January, 1863, Governor Tod was succeeded by the Hon. John Brough, as Governor and Commander-in-chief, and I was called from service in the Medical Staff of the U. S., in which I had been almost constantly engaged since May, 1861, to the position of Surgeon General of the State.

On my recommendation, Governor Brough constituted the State Board of Medical Examiners by the appointment of J. W. Russell, M.D., of Mt. Vernon, President; G. C. E. Weber, M.D., Cleveland, Secretary; and J. A. Murphy, M.D., Cincinnati. They are all gentlemen of acknowledged ability, and of high professional standing, and had all filled the same position during previous administrations. And, just here, it is proper to remark that they have discharged their delicate and responsible duties with the most conscientious fidelity, and have only recommended those for appointment and commissions, whom they felt, in every way competent to discharge the duties of an office so full of sacred trust, and I am proud to know, and happy to state, that the high standard of qualification adopted at the beginning of the war has not been *lowered* by the Board, and the experience of nearly five years has demonstrated the wisdom of the creation of a Board of Medical Examiners at the beginning of the war.

On the death of the lamented Governor Brough, on the 29th August last, you were providentially called to the office of Governor of Ohio, and I had the honor of being retained on your staff, and was desired to continue in the discharge of the duties of Surgeon General of the State, consequently no change has been made in the Board of Medical Examiners since my accession to the head of the Medical Bureau of the State.

My official report for last year contains a full expose of the transactions of this Department for the first ten months of my term of office for that period, therefore, I only briefly refer you to a few facts, so as to give a short but connected history of the official transactions of the Department during the war.

During the year 1864, (commencing Jan. 13, and ending Nov. 15) there were three conventions of the Board to examine applicants for volunteer regiments, and one meeting to examine candidates for the regiments of the National Guard, which the exigencies of the war rendered necessary to send to the field for the period of 100 days, and during that period (ten months) one hundred and thirty medical gentlemen were commissioned and sent to the field, both with new organizations and to old regiments in which the casualties of the service created vacancies. For the National Guard, forty major and eighty assistant surgeons were commissioned. The number of promotions during that time were sixty-nine, and number of deaths were fifteen—seven surgeons and eight assistants—and number of resignations were forty-four. A large majority of those resigning were compelled to do so by reason of ill health incurred by over-labor and exposure, and in many instances never to be regained; but those who sufficiently recovered, almost without exception, again returned to their labor of patriotism and duty.

The number of dismissals from the service for incompetent and unfaith-

ful discharge of duty, was gratifyingly few, as it has been during the year just closed.

A tabular statement is appended, showing names of parties commissioned, date of commission, of resignation, of promotion, of death and dismissal.

Notwithstanding the increased strength of the Medical Staff, and the enlarged and better arranged hospital facilities, a large amount of additional medical and surgical aid was constantly required. This additional help has been promptly provided, but mainly in a different manner from the volunteer system hitherto pursued.

That there should at no time or place be a lack of medical or surgical aid, I early made arrangements with the Surgeon-General and Assistant Surgeon-General U. S. A., that by requisition on this Bureau, through Medical Directors of Departments, for extraneous medical aid, it was promptly furnished by contract for definite periods of time, compensation and transportation being provided by the National Government.

This class of medical officers were required to be examined as to their professional ability and skill, by the legally constituted Board in the same manner as for commissions, and were, while under contract, entitled to the same privileges, possessed the same powers, and were equally responsible with commissioned officers. In this manner I was enabled, at all times, to supply every requisition made upon me for the constantly increasing wants of our vast armies, and by this means the supply was always constant, sufficient and efficient. As per exhibit by table, there has been supplied from this office up to this date, of this class of medical officers, one hundred and fifty-eight. Of these ninety-five were furnished last year, and sixty-three this year.

Since the date of my last report, there has been but one meeting of the State Board of Medical Examiners. Their report is herewith appended, by which it will be seen that thirty-eight gentlemen were favorably reported upon, all of whom have entered the service either by commission or by contract, and have rendered efficient service.

For the names and number commissioned, promoted, resigned, discharged and deceased, and also for those still remaining in service, I respectfully refer you to the tabular portion of the report.

In recommending major surgeons for new regiments, and also to fill vacancies in old regiments, I have, as a matter of justice as well as for the benefit of the service, uniformly made selections from the ranking Assistant Surgeons in the field.

NATIONAL GUARD.

But one medical officer has been commissioned during the year for the National Guard. Many of the regiments of this organization are now without a medical staff, for the reason that most of them were rapidly

organized, and some by the consolidation of battalions, at the time they were called into the field for the hundred days' service, and many medical officers were commissioned for the hundred days only, others have since resigned, and of the acceptance of resignations I am not always advised by the commanding officer, consequently I am unable to report the number of vacancies, or specify the regiments in which they exist. And furthermore, commandants of regiments, according to the militia law of the State, are required to select the medical staff of their respective commands, and accordingly no commissions can be issued until the designations are made and approved by the Medical Department.

With the view of having the medical staff of the Guard filled, as designed by law, it is my intention at an early day to address a circular to the commanders of the several regiments and battalions, inviting them to take the proper steps for completing their organization by the appointment of medical officers to their commands.

COUNTY MILITARY SURGEONS.

With the view of rendering greater efficiency, and cutting off the too great license of the exempting clause of the law, entitled "An act to organize and discipline the militia of Ohio," on the grounds of physical disability, in my last report I called the Commander-in-Chief's attention to the matter in the following language :

"I desire, through your Excellency, to call the special attention of the Legislature to section six of the militia law, which treats of exemptions from military duty by reason of physical disability. Clause fifth of said section provides as follows: "Every person physically disabled may be exempted from military duty if he files with the County Auditor, on or before August 15th of every year, a statement of a reputable physician or surgeon, certifying that such person is unfit for military duty by reason of such physical disability or bodily infirmity, which shall be described in said statement. This statement should be verified by the affidavit of said physician or surgeon. If any person shall knowingly or wilfully make a false affidavit in this matter, he shall be deemed guilty of perjury."

"I would respectfully suggest that this clause be so modified as to provide for the appointment of a medical officer in each county of the State, to hold his office for the same period as other State officers, and appointed in the same manner as other military medical officers; and whose duty it shall be to examine persons held under the law for military duty, claiming exemption for physical disability: and that such physician shall be the only person qualified to give certificates of exemption—these certificates to be filed, as now, with the County Auditor. They should be explicit as to the nature of the disability, and governed by the rules exempting from military duty in the U. S. army. I would also respectfully suggest that the law be so amended as to require the several County Auditors to forward copies of all such exemptions to this Department by a certain date of each year. The examining physician to be paid a cer.

tain sum for each party examined, such compensation to come from the party claiming exemption. This fee should not be so large as to be oppressive to the poor."

The abuse of clause fifth of the law as it was originally passed, was so great and manifest, that the then Governor and Commander-in-Chief, and his Adjutant-General, heartily indorsed me in my recommendation, through the proper channels, to the law-making power, for a change. Accordingly, the act passed March 31st, 1864, was amended, under the following title: "An act to amend and supplementary to an act entitled 'an act to organize and discipline the militia of Ohio, and to repeal an act therein named,'" so as to read as follows:

SEC. 2. That section six of the above-recited act be and the same is hereby amended so as to read as follows:

Sec. 6. In addition to the persons absolutely exempted from enrollment in the militia by the laws of the United States, the persons herein-after exempted shall be absolutely exempted from enrollment, viz.:

1st. All persons in the army or navy or volunteer forces of the United States:

2d. Persons who have been or hereafter may be honorably discharged from the army or navy of the United States, after having performed military duty for one year or more during the existing rebellion.

5th. Every person physically disabled may be exempted from military duty, if he files with the county auditor, on or before August 15 of every year, a statement of the county military surgeon, certifying that such person is unfit for military duty by reason of such physical disability or bodily infirmity, which shall be described in said statement.

6th. Idiots, lunatics, and felons convicted of infamous crimes, unless pardoned, shall not be subject to military duty.

SEC. 4. That there shall be appointed by the governor, in each county of this State, a military surgeon, who shall be commissioned for the term of three years, unless sooner discharged, with the rank of major, who, before entering upon his duties, shall take an oath to faithfully perform the duties of his office. That from the first day of July to the fifteenth day of August in each year, it shall be the duty of said surgeon to keep an office at the county seat, and examine all applicants for exemption upon the payment to him by the applicant of the sum of fifty cents, together with such stamps as may be required by law; and if he is of the opinion that the applicant is unfit for the performance of military duty, he shall give him a certificate as required by section two of this act. If any surgeon shall knowingly give a false certificate, he shall be deemed guilty of a misdemeanor, and be fined in any sum not exceeding fifty dollars for each offense; to be recovered by indictment in the proper county, for the benefit of the military fund. The examination and recommendation of the medical board shall not be required from said county military surgeons.

SEC. 5. The county military surgeon shall keep a record showing the name and residence of each person exempted, and the reason therefor, and shall make report thereof to the surgeon-general on or before the first day of September in each year; and in all his duties shall be governed by such rules and regulations as the surgeon-general may prescribe.

SEC. 6. At any time after the 15th of August and before payment,

the adjutant-general is authorized, upon the certificate of the military surgeon of the proper county, and upon being satisfied that no application was made for exemption, to the county auditor, before the 15th of August, and of a reasonable excuse for such omission, to grant to any applicant a certificate of exemption, upon the payment by the applicant of all costs of distraint, which may have accrued previous to the presentation of such certificate to the county auditor.

Immediately after the passage of this amendatory and supplementary act of April 12, 1865, the Governor, on my nomination, had a surgeon commissioned for each county of the State. Their names and residences will be found by reference to tabular statement. These officers were all selected for their well-known integrity, capacity and skill, gained while in the medico-military service of the United States.

To enable them to carry out both the letter and spirit of the law, as defined in Sec. 6, clauses 1, 2 and 5, and Secs. 4 and 5, I prepared and furnished the following circular for each surgeon and county auditor, including regulations and full instructions :

1. As provided for by law, the examining surgeon shall open his office in the county seat by the first day of July in each year, and keep it open until the 15th day of August of each year.

2. The examining surgeon shall keep an exact record of every case examined. Blank-books for this purpose will be furnished from the office of the Surgeon-General.

3. A report of all examinations, with the results, must be forwarded by the 1st of September of each year to the Surgeon-General. Blank forms for which will be furnished, on requisition of examining surgeon, from time to time as they may be required.

4. The character and amount of evidence to decide exemption must be decided, as nearly as possible, in accordance with the schedule herewith appended. Many recent acute diseases, not enumerated in the list, will occur, which temporarily disqualify a man for service. The fitness or unfitness of such cases for State military service, must be determined by the examining surgeon.

5. No certificate of a physician or surgeon to be received in support of any point in the claim for exemption from military service, unless the facts and statements therein set forth are affirmed or sworn to before a person authorized by law to administer oaths.

6. The duty of inspecting men, and of determining whether they are fit or unfit for the military service of the State, requires the utmost impartiality, skill and circumspection on the part of the examining surgeon.

7. In the examination, the examining surgeons will bear in mind that the object of the law is to secure the services of men who are effective, able-bodied, sober, and free from disqualifying diseases.

8. The examining surgeons will also remember, that the object of a man claiming exemption may be to escape the service, or the payment of the fee, by pretended, simulated, or fictitious diseases, or by exaggerating or aggravating those that really do exist.

9. The examination is to be conducted in the day-time, in a room well lighted and sufficiently large for the man claiming exemption to walk about and exercise his limbs, which he must be required to do briskly.

10. The man may be examined stripped, when the examining surgeon deems it necessary to a satisfactory result.

11. The surgeon will habitually conduct his examination of an applicant in the following order, to ascertain—

1. Whether his limbs are well formed and muscular; whether they are ulcerated or extensively cicatrized; whether he has free motions of all the joints, and whether there are any varicose veins, tumors, wounds, fractures, dislocations, or sprains that would impede his marching, or prevent continuous muscular exertion.

2. Whether the thumbs and fingers are complete in number, are well formed, and their motion unimpaired.

3. Whether the feet are sufficiently arched to prevent the tuberosity of the scaphoid bone from touching the ground; whether the toes are complete in number, do not overlap, are not joined together.

4. Whether he is sufficiently intelligent, is not subject to convulsions, and whether he has received any contusion or wound of the head that may impair his faculties.

5. Whether he has any inveterate or extensive disease of the skin.

6. Whether his hearing, vision and speech are good, and whether the eye and its appendages are free from disqualifying disease.

7. Whether his chest is ample and well formed, in due proportion to his height, and with power of full expansion.

8. Whether there is any functional or organic disease of the heart.

9. Whether the abdomen is well formed and not too protuberant; whether either the liver or spleen is considerably enlarged, and whether the rectum and anus are free from disqualifying disease.

10. Whether the spermatic cord and testes are free from diseases which would impair his efficiency; whether the testes are within the scrotum, and whether he has any rupture.

11. Whether there is any organic disease of the kidney or bladder, or permanent stricture of the urethra.

12. Whether his physical development is good, and constitution neither naturally feeble, nor impaired by disease, habitual intemperance, or solitary vice; whether he is free from phthisis, scrofula and constitutional syphilis, and whether he is epileptic, imbecile, or insane.

The following diseases and infirmities are those which disqualify for military service, and for which men, claiming exemptions from State military duty, are to be "exempted, as physically or mentally unfit for the service," viz.:

1. Manifest mental imbecility.

2. Insanity. This includes well-established recent insanity, with liability to recurrence.

3. Epilepsy. For this disability the statement of the applicant is insufficient, and the fact must be established by the duly attested affidavit of a physician in good standing, who has attended him in the disease within the six months immediately preceding his examination by the examining surgeon.

4. Paralysis, general, or of one limb, or chorea; their existence to be adequately determined. Decided atrophy of a limb.

5. Organic diseases of internal organs, which have so seriously impaired his health as to leave no doubt of his incapacity for military ser-

vice, and which prevents his pursuing any equally laborious occupation in civil life.

6. Developed tuberculosis.

7. Cancer; aneurism of large arteries; organic disease of the heart, involving *valvular lesion*.

8. Inveterate and extensive disease of the skin, such as will necessarily impair his efficiency as a soldier.

9. Scrofula, or secondary syphilis, which has so seriously impaired his general health as to leave no doubt of the man's incapacity for military service.

10. Chronic rheumatism, manifested by positive change of structure, wasting of the affected limb, impaired motion, puffiness, and distortion of the joints.

11. Total loss of sight of right eye; cataract of right eye; loss of crystalline lens of right eye.

12. Partial loss of sight of both eyes, vision being so greatly impaired as to leave no doubt of the man's inability to perform military duty; serious permanent diseases of the eye or eyelids, so manifestly affecting the use of the eyes as to leave no doubt of the man's incapacity for military service. Myopia does not exempt.

13. Total loss of nose; deformity of nose so great as seriously to obstruct respiration; ozæma, dependent on caries.

14. Decided deafness. This disability must not be admitted on the mere statement of the man claiming exemption, but must be proved by the existence of positive disease, or by other satisfactory evidence; and it must be so decided as to leave no doubt of the man's unfitness for military service. Chronic purulent otorrhœa.

15. Incurable diseases or deformities of either jaw, such as will necessarily greatly impede mastication or speech; ankylosis of lower jaw; caries of bones of face, if in progress; cleft palate (bony); extensive loss of substance of the cheeks, or salivary fistula.

16. Dumbness; permanent loss of voice; not to be admitted without clear and satisfactory proof.

17. Total loss of tongue; hypertrophy, atrophy, mutilation, or obstinate chronic ulceration of the tongue, if sufficient in degree to seriously interfere with the use of that organ.

18. Stammering, if excessive and confirmed.

19. Tumors or wounds of the neck, impeding respiration or deglutition fistula of larynx or trachea.

20. Excessive deformity of chest, or excessive curvature of the spine, sufficient to prevent the carrying of arms and military equipments; caries of spine, ribs, or sternum, attended with ulceration.

21. Hernia, when in the opinion of the examining surgeon it is of such a character as to unfit him for military service.

22. Artificial anus; stricture of rectum; prolapsus ani; fistula in ano, if extensive or complicated with visceral disease.

23. Old and ulcerated internal hæmorrhoids, if in a degree to leave no doubt of the man's unfitness for military service. External hæmorrhoids are no cause for exemption.

24. Incurable permanent organic stricture of the urethra, in which the urine is passed drop by drop, or which is complicated by disease of the bladder; urinary fistula. Recent or spasmodic stricture of the urethra does not exempt.

25. Stone in the bladder, ascertained by the introduction of the metallic catheter, is a positive disqualification.

26. Confirmed or malignant sarcocele; hydrocele, if complicated with organic disease of the testicle. Varicocele is not, in itself, disqualifying.

27. Loss of hand or foot.

28. Wounds which would manifestly incapacitate the man for military service; muscular or cutaneous contractions from wounds or burns, which would prevent marching, or otherwise manifestly incapacitate the man for military service.

29. Fractures, irreducible dislocations or ankylosis of the large joints, or chronic diseases of the large joints or bones, that would prevent marching, or otherwise unfit the man for military service.

30. Total loss of right thumb; total loss of first and second fingers of right hand; permanent extension or contraction of first and second fingers of right hand; all the fingers adherent or united.

31. Club feet; total loss of great toe; other permanent deformities of the feet, such as will necessarily prevent marching.

32. Varicose veins of inferior extremities, if accompanied with chronic swellings or ulcerations.

33. Chronic ulcers; extensive, deep, and adherent cicatrices of lower extremities.

34. Permanent physical disability of such a degree as to leave no doubt of the man's unfitness for military service.

35. The matter of stature should be considered by the examining surgeon only, in the general examination, as to the physical fitness of the man to perform military duty. No limits of stature are established by law beyond which they shall be exempt from military service.

By order of the Governor and Commander-in-Chief.

R. N. BARR, *Surg.-Genl.*

I also prepared and furnished to each Examining Surgeon, a Register to be faithfully kept by him, containing a full descriptive list of each person examined, together with cause and character of disability, and also furnished blank-forms—exact duplicates of the register—on which to make annual returns to this office.

So far as I have been able to ascertain, the law has worked well. Doubtless some were not exempted who were, under its provisions, legally entitled to exemption, from ignorance of its provisions and requirements; but another year will remedy that matter. Under its operations the military strength of the State has been increased, as has also been the military commutation fund, on which the whole system is dependent for support. And here I would respectfully suggest, that if more funds are collected than required for the support of the military organization of the State that a portion, by legislative enactment, be appropriated to the sustenance of the *State Soldiers' Home*, and for the needy families of the heroic dead and disabled soldiers.

I herewith, also, append a short consolidated report of the various County Military Surgeons, every one of whom reported promptly.

This report shows that about 16,000 of the arms-bearing population are disqualified for military duty, by reason of physical disability, or about one in every twenty-five.

In another year, when the law becomes fully known, this number will be about doubled, which is probably the proportion as it really exists. The report also shows some other facts interesting and useful, both in a national and scientific point of view; but to give these reports their full value, they should all be published in full; but this would make a large volume, and I do not feel authorized to put that expense upon the State without special instructions to do so. Should this law, however, be kept in operation a few years, the statistics of this bureau will give the exact number of disabled male population of arms-bearing age, and the cause of disability of each person, with a perfect description of his person, age, nativity, social condition, color, &c., and by computation the most common causes of disability; and by comparing the whole number exempted with the number enrolled, the exact military strength of the State could be exactly known at any time when it might be required.

In addition to a tabular statement of appointments made, and commissions issued during the year just passed, I have appended a roster of all appointments, promotions and casualties during the war in the Medical Staff of Ohio, also a list of Ohio Medical officers in the Medical Corps of the U. S. army, known as Surgeons of Volunteers, and of contract or Act. Asst. Surgeons employed in the Northern Department. These, as a class, have not been surpassed by the medical corps of any State in the Union in skill and fidelity.

In addition to this large number, many medical men of Ohio have served with honor and distinction in the ranks and as line officers.

REPORTS FROM MEDICAL OFFICERS IN THE FIELD AND HOSPITALS.

Many reports of a most interesting and valuable character have been received at this office, from various regimental and surgeons of Volunteers, which, if published, would make an interesting volume; but to the Bureau of Military Statistics more properly belongs all reports of this kind. Should that Bureau fail, for the lack of legislative action, to see the light of day, the enterprise of a full publication of all matter pertaining to the medical and hygienic history of the war will be undertaken by private parties, whose ability and character is a sufficient guaranty for the success and value of the work.

But as a sample of the character and value of these reports, and to show the success of the surgery of the war, I insert a report made to me by Surgeon H. Z. Gill, formerly Surgeon 95th O. V. I.

I also append balance of report of Prof. J. H. Salisbury, of Cleveland, who received official authority from Gov. Tod to visit our various camps and hospitals, and to report, for publication, the most prevalent diseases incident to camps and armies, their causes and best modes of prevention and treatment. Dr. Salisbury entered upon this work with great zeal, and prosecuted it with great perseverance, energy and success, as his report will show.

SOLDIERS' HOME.

A brief allusion to the establishment and successful workings of the *Home* for disabled soldiers and sailors, in this report, is thought to be proper, as its establishment was to a large extent the work of this Bureau.

In consequence of the already large number of discharged disabled soldiers, who were homeless and friendless, you are aware that during the last session of the General Assembly a bill was drafted, and, I believe, passed one branch of the Legislature, to provide an asylum or home for these persons, to whom the State and County still owed a large and unpaid debt; but as the war was still in progress in its most gigantic proportions, and the State was still being heavily pressed for more men and money, it was thought by a majority of the Legislature that the measure, though proper and deserving, was premature, and was accordingly defeated and passed over. But shortly after the adjournment of the Legislature, by the defeat and surrender of Lee's army of rebels, and followed in rapid succession by those of Johnson, Kirby Smith and others, the war was practically and suddenly brought to a close. The State and Nation breathed easy again. The work of disbanding of the army commenced. Hospitals were rapidly broken up and discontinued; uncared and disabled soldiers mustered out and sent to their homes. Early in the spring and summer it became painfully evident that some provision must be made for this class of persons, so well deserving, from the hands of a grateful people and State. Therefore, after many long and full conferences with Governor Brough, it was determined to attempt some provision for them. As there were four large Government Hospitals in the State, especially constructed by the National Government for hospital purposes, it was determined to make application to the War Department for the use of one of them, for a consideration, until such time as more permanent arrangement could be made; and to defray the current expenses out of the Governor's Military Contingent Fund, with such additional aid as could be obtained through the various Soldiers' Aid Societies, Sanitary and Christian Commissions, and a generous people, to whom a call for the benefit of the soldier was never made in vain. Accordingly, Governor Brough made a personal application to the Hon. Secretary of War, for the use of a government hospital, within the bounds of the State, to try the experiment.

Secretary Stanton responded promptly and kindly, not with the loan of a hospital, but with the donation of the U. S. General Hospital near this city, known as Tripler Hospital, with all its equipments of bedding, bedsteads, cooking utensils, and quartermaster's property generally, with the exception of wagons, ambulances and horses. The total cost to the government of this hospital, with such equipments as were donated, was not less than one hundred and fifty thousand dollars. The only condition was that the government was to retain the use of it until it could be turned

over without detriment to the service. An order was accordingly issued to the Quartermaster and Surgeon Generals to turn over, and take receipts therefor, to a properly appointed agent of the Governor of Ohio, at such time as it could be spared, and an order was issued to Surgeon Tripler, U. S. A. Medical Director Dept. of Ohio, to vacate it as fast as possible by discharges and transfers.

In the latter part of July last Colonel Tripler notified Governor Brough that he was nearly ready to turn over the property, and to designate an officer to receipt therefor, and take possession of the buildings. His Excellency designated myself as agent for the State to receipt for, take possession of, and to make all necessary arrangements for putting in operation, and carrying out the design of the establishment of a Soldiers' Home. At this time Governor Brough was confined to his bed with a severe illness, and which, a few weeks later, proved mortal, I was consequently unable to leave his bedside to carry out this, his darling project, during his lifetime. After his death you were pleased to comply with what had been the wishes of your predecessor, and appoint me to carry out his designs.

This I was also, for several weeks, prevented from doing by a protracted illness. But, finally, on the 17th of September, I receipted for and took temporary possession. The next matter was to obtain the necessary money for current expenses, and suitable parties to superintend, and render the required Medical aid. The large drain of the last few months had exhausted the Contingent Fund under your control, and money in considerable amounts was necessary even to make a beginning.

At your suggestion I visited the Committees of the Sanitary and Christian Commissions, in Cincinnati, Ohio, and explained to them, in detail, the object of my mission. The latter society was without funds, but gave me their sympathy and offered to set about raising money. The Sanitary Commission immediately and generously proffered the requisite funds, and fifteen thousand dollars (\$15,000) was voted by the association for the purpose. Immediately after this proffered aid steps were taken to open the Home for the reception of patients, or of such disabled soldiers and sailors as might seek a home there.

With a view to place it upon a similar basis with other State benevolent institutions, you constituted a Board of Directors or Trustees, by the appointment of the following gentlemen: Stillman Witt, of Cleveland; Hon. J. C. Hall, of Toledo; Hon. L. B. Gunckel, of Dayton; Chas. F. Wilstack, of Cincinnati, and myself for the fifth member.

This board held its first meeting on October 5th, and elected Captain Isaac Brayton, of Cuyahoga County, Superintendent of the Soldiers' Home; J. C. Denise, M.D., of Dayton, Resident Surgeon; and instructed me to act in capacity of Consulting Surgeon; and Mrs. E. L. Miller, of

Cleveland, Matron. All of these persons have had a large experience in management of army or civil hospitals.

On the 17th of October last the *Home* was formally opened with an address of welcome to the thirteen inmates then present, by your Excellency. Since its establishment many donations of both money and delicacies have been made. The largest of these comes from the Cleveland Branch U. S. Sanitary Commission, a check for \$5,000, and from Urbana, \$500; from others many smaller amounts, but as liberal as their ability would justify.

Concerning the management and success of the *Home*, I need not go into further details, as the Board of Trustees will make a report of its own official transactions, and speak in detail of the success of the Institution, its present condition and future wants. I will only add that its success and usefulness, so far, exceeds the most sanguine expectations of its friends, and is a living witness and testimony of their forethought, sagacity and philanthropic motives of its establishment. It is hoped the Legislature will make most ample provisions for its continued maintenance. Up to this date, just two months from its opening, about one hundred and fifty inmates have been admitted.

I have, sir, thus briefly given you an outline of the principal transactions, and the duties appertaining to the Bureau, over which I preside, I will avail myself of this opportunity again to express, through your Excellency, my obligations to the officers of the Medical and other Departments at Washington, for their uniform courtesy and kindness to me personally, and for their ever ready willingness to afford aid in the adoption and execution of measures for the promotion of the interests and welfare of Ohio soldiers. Also to the Medical Directors of this and other Departments, who, notwithstanding the multiplicity of their duties, have always promptly granted all official applications for transfers, and approved such requisitions and proposals as were made by medical officers in charge of our soldiers.

My intercourse and correspondence with the medical officers from our State, which has been very large, and with the field and line officers, has, with very few exceptions, been of the most friendly and agreeable character. In all the duties assigned to, or assumed by me, in the last two years. I have been greatly aided by the gentlemen at the heads of the different State Departments. To them, and the gentlemen composing the State Board of Medical Examiners, who have most faithfully and impartially performed their delicate task, I take pleasure in thus publicly rendering acknowledgments of their services.

As our official relations are about to be severed, permit me to express my grateful obligations to you for your kindness and courtesy to me always, and for the confidence you have placed in me by retaining me on your staff, and also permit me to express my grateful recollections of the

unvarying kindness and confidence reposed in me by your Excellency's predecessor, the lamented Governor *John Brough*, in the administration of duties which were often trying, perplexing and responsible, and to the discharge of which I have given all my energies.

Trusting that I have, in some measure, succeeded in my honest endeavors, the faithful discharge of a public trust,

I am, Governor,

Your obedient servant,

R. N. BARR,

Surgeon-General.

A.

REPORT OF OHIO STATE BOARD OF MEDICAL EXAMINERS, 1865.

COLUMBUS, O., March 10, 1865.

R. N. Barr, Surgeon-General of Ohio:

SIR—In obedience to your order, we assembled at the State Capitol, March 8th, 1865, and examined — gentlemen, both by written questions and orally, as to their qualifications for the position of Assistant Surgeons of Ohio Regiments.

Of this number, we have found the following named gentlemen fully competent to discharge the duties of Assistant Surgeons, and accordingly recommended them to be commissioned.

JOHN W. RUSSELL, M.D., *Pres't.*

GUSTAV C. E. WEBER, M.D., *Sec'y.*

W. J. Andrews	Cincinnati.
George W. Pease	Willoughby.
Elmore Y. King	Frederickstown.
J. T. Franks	Apple Creek.
L. S. B. Otwell	Greenville.
Curtis Otwell	Greenville.
James H. Welsh	Riley.
John A. Wegg	Panama, Cent'l Am.
Lewis H. Hazeltine	H. S. U. S. A.
B. F. Graham	Chili.
D. B. Elson	Wooster.
J. P. Waste	Willoughby.
Clarke A. Moore	Cambridge.
D. G. Alling	Norwalk.
Foster Bodle	Oberlin.
Amos Laurence	Cincinnati.
Hugh L. Strain	Greenfield.
Hannibal Langdon	Columbus.
Ambrose Brown	Spencer.
Lyman Dow	Bellefontaine.
T. M. Coleman	New Carlisle.
H. B. Martin	Melmore.
Douglass Bell	New Concord.
T. J. Livers	Fostoria.
George Willis	Hamden.
M. L. Brooks, Jr.	Cleveland.
Wesley Anderson	White Cottage.

Charles E. Monroe.....	H. S. U. S. A.
John M. Wheaton.....	Columbus.
Cuno Kebele.....	New Washington.
Wm. E. McKim.....	Hockingsport.
T. H. Patterson.....	Latrobe.
F. F. Falk.....	Akron.
R. D. Webb.....	Logan.
W. M. Evans.....	Ashtabula.
H. N. Rodgers.....	Co. H, 186th O. V. I.
Howard C. L. Force.....	Cincinnati.
E. W. Price.....	Co. H, 184th O. V. I.
A. C. Newell.....	Medic'l Cadet U.S.A.

B.

APPOINTMENTS OF MEDICAL OFFICERS DURING 1865.

Date.	Name.	Residence.	Rank.	Regiment.
April	3 J. B. Young.....	Rock Island, Ill....	Asst. Surgeon...	15
February	20 Horace P. Kay.....	East Fairfield.....	Surgeon.....	18
May	29 Samuel A. Baxter.....	Lima.....	Asst. Surgeon.....	18
May	10 Arthur C. Newell.....	Medic'l Cadet U.S.A.	do.....	18
April	10 J. H. Biteman.....	Lima.....	do.....	19
May	10 Elmore Y. King.....	Frederickstown....	do.....	23
July	17 Lewis Slusser.....	Canton.....	Surgeon.....	26
April	11 John L. Chapel.....	Colebrook.....	Asst. Surgeon.....	27
June	10 C. K. Clarke.....	Mechanicsburg.....	do.....	32
April	18 B. F. Holcomb.....	Vinton.....	do.....	36
April	9 W. J. Andrews.....	Cincinnati.....	do.....	39
March	10 Wesley Anderson.....	White Cottage.....	do.....	43
May	10 L. E. Weagley.....	Wooster.....	do.....	51
June	28 W. F. Hani.....	Berlin Centre.....	do.....	53
April	20 D. H. Cowan.....	Hospital Steward....	do.....	54
April	22 D. M. Frazer.....	Bethel.....	do.....	57
February	15 W. E. Patterson.....	New Lisbon.....	do.....	65
February	1 Smith D. Steen.....	Huntsburg.....	do.....	73
June	8 C. A. Moore.....	Cambridge.....	do.....	74
March	31 R. D. Webb.....	Logan.....	do.....	78
March	23 W. W. Fountain.....	Columbus.....	do.....	88
May	3 J. P. Shilling.....	Louisville.....	do.....	88
March	31 D. G. Alling.....	Norwalk.....	do.....	91
March	24 M. L. Brooks, Jr.....	Cleveland.....	do.....	93
April	3 H. H. Russel.....	Tupper's Plains.....	do.....	101
April	1 Jacob B. Casebeer.....	Cincinnati.....	do.....	103
March	23 T. M. Coleman.....	New Carlisle.....	do.....	186
April	17 Henry M. Shaffer.....	Delaware.....	Surgeon.....	187
April	3 Theodore H. Patterson..	Lagrange.....	Asst. Surgeon.....	187
May	2 Wm. B. Shaffer.....	Delaware.....	do.....	187
July	17 H. W. Carpenter.....	Lancaster.....	do.....	187
March	7 A. W. Munson.....	Kenton.....	Surgeon.....	188
March	4 John M. Wheaton.....	Columbus.....	Asst. Surgeon.....	188
March	14 Hannibal Langdon.....	Columbus.....	do.....	188
March	9 Sidney E. Gordon.....	Georgetown.....	Surgeon.....	189
March	10 L. S. B. Otwell.....	Greenville.....	Asst. Surgeon.....	189
March	10 Curtis Otwell.....	Greenville.....	do.....	189
March	11 James W. Warfield.....	Barnesville.....	Surgeon.....	191
March	11 B. F. McKinnon.....	.....	Asst. Surgeon.....	191
March	11 George Willis.....	Vinton.....	do.....	191
March	14 Joseph E. Barrett.....	Asst. Surg. 23d O.V.I	Surgeon.....	194
March	14 Jacob T. Franks.....	Millersburg.....	Asst. Surgeon.....	194
March	20 T. J. Livers.....	Fostoria.....	do.....	194
July	15 B. F. Graham.....	Millersburg.....	do.....	194
March	15 Wm. S. Parker.....	Asst. Surg. U. S. W.	Surgeon.....	192
March	9 C. B. Holcomb.....	.....	Asst. Surgeon.....	192
March	15 H. B. Martin.....	Melmore.....	do.....	192
March	18 Wm. S. Newton.....	Asst. Surg. 91st O.V.I	Surgeon.....	193
March	14 J. P. Waste.....	Willoughby.....	Asst. Surgeon.....	193
March	22 Ambrose Brown.....	Spencer.....	do.....	193
March	19 John Dickerson.....	Ass. Surg. 36th O.V.I	Surgeon.....	195
March	18 D. B. Elson.....	Wooster.....	Asst. Surgeon.....	195
March	21 Hugh L. Strain.....	Greenfield.....	do.....	195
April	10 H. B. Noble.....	Asst. Surg. 2d O.V.C	Surgeon.....	196
March	21 J. W. Driscoll.....	Sidney.....	Asst. Surgeon.....	196
March	22 C. J. Shields.....	Tiffin.....	do.....	196
April	1 W. G. Bryant.....	Ass. Surg. 122d O.V.I	Surgeon.....	197
March	30 George W. Pease.....	Willoughby.....	Asst. Surgeon.....	197
March	31 Amos Lawrence.....	Cincinnati.....	do.....	197

Appointments of Medical Officers during 1865—Continued.

Date.	Name.	Residence.	Rank.	Regiment.
May 16	Adolf Matzdorf.....	Hospital Steward..	Asst. Surgeon...	108th O. V. I.
January 4	Henry C. Beard.....	Cincinnati	do	1st O. H. Art
March 19	Wm. E. McKim.....	Columbus	do	125th O. V. I.
May 2	James F. Thompson....	A. A. Surg. U. S. A..	do	60
February 28	George A. E. Carey.....	Oxford	do	1st O. H. Art
June 14	N. B. Brisbine.....	Upper Sandusky..	Surgeon.....	2d Cav.
May 18	Mathias Cook.....	Columbus	Asst. Surgeon...	2d Cav.
April 20-1	Cuno Kebele	New Washington..	do	6th Cav.
June 4	John Kaps .....	.....	do	7th Cav.
October 5	J. H. Finefrock.....	Mansfield	do	11th Cav.
Sept. 20	George W. Pease.....	Willoughby	do	12th Cav.
March 8	Charles E. Monroe.....	Taunton, Mass....	do	174th O. V. I.
January 17	C. M. Fiser.....	.....	do	176
April 5	Harvey N. Rodgers.....	Co. H. 186th O. V. I.	do	177
April 10	Howard C. La Force....	Cincinnati	do	179
July 11	Wm. H. Brown.....	.....	do	180
April 10	Thos. J. Thompson....	Westerville	do	182
February 18	T. G. Myer.....	Cleveland	Surgeon.....	184
February 18	R. A. Richardson.....	Oberlin	Asst Surgeon...	184
February 28	H. H. Shaw.....	Mt. Gilead	do	184
April 25	Emmett W. Price.....	Ord. Serg. Co. H, 184	do	184
March 11	E. Dillon Bowers.....	Asst. Surgeon 93d..	Surgeon.....	185
February 25	Foster Bodell.....	Oberlin	Asst. Surgeon...	185
June 17	James H. Welsh.....	Riley	do	185
March 1	W. H. Matchett.....	Yellow Springs....	Surgeon.....	186
March 1	Wm. Hargreaves.....	Rootstown	Asst. Surgeon...	186

PROMOTIONS DURING THE YEAR 1865.

Rank.	Name.	Promoted to	Regiment.	Date.
Asst. Surgeon...	D. D. Benedict.....	Surgeon	17th O. V. I..	June 6, 1865.
Act. Asst. Surg..	Horace P. Kay.....	"	18th " ..	Feb. 20, "
Asst. Surgeon...	A. H. Sowers	"	19th " ..	April 10, "
.....	Lewis Slusser	"	26th " ..	July 17, "
Asst. Surgeon...	Thos. B. Miser.....	"	29th " ..	July 7, "
"	H. B. Powell	"	38th " ..	Jan'y 20, "
"	Davis Halderman.....	"	46th " ..	Jan'y 17, "
"	Jacob Huber.....	"	47th " ..	July 15, "
"	James Baggs	"	54th " ..	Feb. 10, "
"	Robt. A. Stephenson.....	"	69th " ..	April 27, "
"	John C. Preston	"	73d " ..	Feb. 1, "
"	C. W. Buvinger	"	80th " ..	Jan. 5, "
"	L. P. Culver	"	82d " ..	June 13, "
"	Henry C. Warner.....	"	88th " ..	March 23, "
"	S. E. Sheldon.....	"	104th " ..	June 13, "
"	John C. Gill.....	"	114th " ..	June 5, "
"	W. H. Jones.....	"	115th " ..	March 11, "
"	H. M. Bassett.....	"	121st " ..	April 12, "
"	Wm. E. McKim.....	"	125th " ..	June 9, "
"	N. B. Brisbane	"	2d O. V. C....	June 14, "
"	W. McMillen.....	"	5th O. V. C....	August 13, "
"	W. K. Hughes.....	"	12th O. V. C....	August 15, "
"	George Cassady	"	182d O. V. I..	March 31, "
"	E. Dillon Bowers	"	185th " ..	March 25, "
.....	W. H. Matchett	"	186th " ..	March 1, "
Asst. Surgeon...	Henry M. Shaffer.....	"	187th " ..	April 17, "
"	Theodore H. Patterson.....	"	187th " ..	June 30, "
.....	Aug. W. Munson	"	188th " ..	March 7, "
.....	Sidney E. Gordon.....	"	189th " ..	March 9, "
Asst. Surg. U.S.N.	Wm. S. Parker.....	"	192d " ..	March 15, "
.....	Jas. W. Warfield.....	"	191st " ..	March 9, "
Asst. Surgeon...	W. S. Newton.....	"	193d " ..	March 18, "
"	Jos. E. Barrett.....	"	194th " ..	March 14, "
"	Thos. J. Livers	"	194th " ..	June 5, "
"	John Dickerson	"	195th " ..	March 19, "
"	H. b. Noble.....	"	196th " ..	April 1, "
"	W. G. Bryant.....	"	197th " ..	April 1, "

D.

RESIGNATIONS FOR THE YEAR 1865.

Regiment.	Name.	Rank.	Date of Resignation.
17th O. V. I.	J. E. Fowler	Surgeon	May 30.
19th "	B. F. Taylor	"	April 1.
26th "	David Rush	"	June.
30th "	C. B. Richards	Assistant Surgeon	
38th "	James Haller	Surgeon	January 4.
38th "	T. D. Brooks	Assistant Surgeon	April 18.
46th "	D. P. Smedley	Surgeon	Dec. 29, 1864.
50th "	Nehemiah Cole	Assistant Surgeon	April.
54th "	C. P. Brent	Surgeon	January 20.
56th "	David Williams	"	Nov. 25, 1864.
57th "	A. C. Messenger	"	Dec. 3, 1864.
61st "	H. K. Spooner	"	March 31.
63d "	John B. McDill	Assistant Surgeon	June 2.
65th "	W. E. Patterson	"	October 20.
80th "	Ezekiel P. Buell	Surgeon	January 7.
82d "	C. W. Myer	"	June.
96th "	G. W. Ramage	Assistant Surgeon	Dec. 12, 1864.
101st "	Henry T. Lacey	"	Dec. 1, 1864.
114th "	Byron Stanton	Surgeon	
115th "	H. B. Johnson	"	February 17.
121st "	T. B. Williams	"	April.
1 "	O. Ferris	"	December 1, 1864.
160th "	Sam M. Evans	Assistant Surgeon	February 8.
175th "	W. F. Hani	"	May 5.
179th "	F. W. Inman	"	February 20.
177th "	Richard Edwards	"	
182d "	Martin Valentine	Surgeon	
182d "	Peter Willet	Assistant Surgeon	
187th "	Henry M. Shaffer	Surgeon	June 20.
194th "	Jos. E. Barrett	"	June 1.
1st O. H. A.	N. B. Lafferty	Assistant Surgeon	January 9.
2d O. V. C.	Joseph T. Smith	Surgeon	March 28.
2d "	Wm. H. McReynolds	"	June 8.
5th "	D. V. Rannels	"	July 15.
10th "	James T. Gardner	Assistant Surgeon	January 18.
12th "	George W. Brooke	Surgeon	
13th "	R. C. Downey	Assistant Surgeon	April 15.

E.

DEATHS OF MEDICAL OFFICERS FOR 1865.

Name.	Rank.	Regiment.	Date.	Where.
John A. Soliday*	Asst. Surgeon	32d Infantry	March 22	Goldsboro, N. C.
Albert Longwell*	Surgeon	88th "	March 18	Camp Chase, O.
Samuel Mathers*	Asst. Surgeon	53d "	May 23	Columbus, O.
J. H. Bileman*	"	19th "	Sept. 25	San Antonio, Texas.

* From disease contracted in the service.

F.

ROSTER OF COUNTY MILITARY SURGEONS.

County.	Name.	Residence.	Date of Muster.
Adams	John Campbell	West Union	July 11, 1865.
Allen	M. A. Harper	Lima	June 23, "
Ashland	P. H. Clarke	Ashland	" 15, "
Ashtabula	W. T. McMurtrie	Lexox	" 16, "
Athens	W. P. Johnson	Athens	" 24, "
Auglaize	J. W. Underwood	Wapakonetta	" 13, "
Belmont	W. Estep	Lloydsville	" 15, "
Brown	Thos. W. Gordon	Georgetown	" 15, "
Butler	J. A. Coons	Hamilton	" 14, "
Carroll	George C. Welsh	Carrollton	" 15, "
Champaign	J. W. Goddard	Urbana	" 19, "
Clark	J. N. Rodgers	Springfield	" 13, "
Clermont	A. C. McChesney	Batavia	" 14, "
Clinton	John R. Walker	Wilmington	" 15, "
Columbiana	Chas. L. Fawcett	New Lisbon	" 14, "
Coshocton	Josiah Harris	Coshocton	" 13, "
Crawford	M. C. Cuykendall	Bucyrus	" 27, "
Cuyahoga	Wm. B. Rezner	Cleveland	" 14, "
Darke	Elijah Lynch	Greenville	" 13, "
Defiance	Jonas Colby	Defiance	" 15, "
Delaware	Mathias Gerhard	Delaware	" 14, "
Erie	J. M. Cory	Sandusky	" 14, "
Fairfield	P. M. Wagenhals	Lancaster	" 13, "
Fayette	O. A. Allen	Washington	
Franklin	J. B. Thompson	Columbus	" 15, "
Fulton	N. W. Jewell	Wauseon	" 21, "
Gallia	Jas. C. Rathburn	Gallipolis	" 26, "
Geauga	L. A. Hamilton	Chardon	" 16, "
Greene	J. G. Kyle	Xenia	" 13, "
Guernsey	J. T. Tingle	Cambridge	" 14, "
Hamilton	Gerhard Saal	Cincinnati	" 13, "
Hancock	H. D. Ballard	Findlay	" 28, "
Hardin	W. M. Chesney	Kenton	" 17, "
Harrison	John McBean	Cadiz	" 15, "
Henry	E. B. Harrison	Napoleon	" 16, "
Highland	N. H. Hixon	Hillsboro'	" 23, "
Hocking	G. W. Pullen	Logan	" 17, "
Holmes	Joel Pomerine	Millersburg	" 15, "
Huron	J. B. Ford	Norwalk	" 14, "
Jackson	C. K. Crummit	Jackson C. H.	" 16, "
Jefferson	John C. Mairs	Steubenville	" 14, "
Knox	Jacob Stamp	Mt. Vernon	" 15, "
Lake	H. C. Beardsley	Painesville	" 15, "
Lawrence	N. H. Moxly	Ironton	" 16, "
Licking	J. R. Black	Newark	" 14, "
Logan	T. S. Clason	Bellefontaine	" 14, "
Lorain	Wm. Bunce	Oberlin	" 27, "
Lucas	W. A. Scott	Swanton	" 20, "
Madison	N. Leemon	London	" 19, "
Mahoning	C. R. Fowler	Canfield	" 22, "
Marion	R. L. Sweeney	Marion	
Medina	S. Hudson	Medina	
Mercer	Joseph N. Hetzley	Celina	
Meigs	C. R. Reed	Middleport	" 19, "
Miami	Horace Coleman	Troy	" 14, "
Muskingum	T. A. Reamy	Zanesville	" 11, "
Monroe	Samuel Grimshaw	Woodsville	" 15, "
Montgomery	Wm. H. Lamme	Centreville	" 15, "
Morgan	Wm. A. Brown	McConnellsville	" 30, "

Roster of County Military Surgeons—Continued.

County.	Name.	Residence.	Date of Muster.
Morrow	L. B. Vorhees.....	Mt. Gilead.....	June 15, "
Noble	John Martin.....	Cauldwell	" 27, "
Ottawa	James Hitchcock	Port Clinton.....	July 3, "
Paulding	Daniel W. Hixon	Paulding	June 27, "
Pickaway	D. N. Kinsman.....	Circleville	" 27, "
Pike	John Arnold.....	Waverley	" 20, "
Portage	C. S. Leonard.....	Ravenna	" 16, "
Preble	E. Mendenhall.....	Eaton	" 15, "
Putnam	L. W. Moe.....	Ottawa	" 15, "
Richland	P. A. Carpenter.....	Mansfield.....	" 14, "
Ross	C. H. French	Chillicothe	" 22, "
Sandusky	J. B. Rice	Fremont	" 15, "
Scioto	O. J. Hall	Portsmouth	" 14, "
Seneca	E. W. Reeme	Tiffin	" 30, "
Shelby	H. S. Conklin.....	Sidney	" 14, "
Stark	K. G. Thomas.....	Alliance.....	" 17, "
Summit	Geo. P. Ashman.....	Akron	" 19, "
Trumbull	M. C. Woodworth.....	Warren	" 14, "
Tuscarawas	Daniel Richards	New Philadelphia	July 1, "
Union	J. W. Smith	Marysville	June 15, "
Van Wert	Wm. Smith.....	Van Wert	" 17, "
Vinton	A. E. Isaminger.....	McArthur	" 16, "
Warren	E. J. Tichenor	Lebanon	" 16, "
Washington	B. F. Hart.....	Marietta	July 1, "
Wayne	W. W. Taggart	Wooster	June 16, "
Williams	H. C. Long	Bryan	" 20, "
Wood	H. A. Hamilton.....	Perrysburg	" 15, "
Wyandot	Orrin Ferris	Upper Sandusky.....	

G.

Abstract of Annual Report of County Military Surgeons for 1865.

Total number examined in State.	Total number exempted.	Total number refused exemption.	Average age.	Average height.	Average measure- ment of chest on inspiration.	Average measure- ment of chest on expiration.	Average weight.
16,885	15,616	1,269	34 $\frac{1}{8}$	5-7	35	33 $\frac{1}{8}$	144 $\frac{1}{8}$

Summary of Medical Officers Appointed, Resigned, Died, Promoted, and Dismissed, during the year 1865.

APPOINTED.

Surgeons	16
Assistant Surgeons.....	69

RESIGNED.

Surgeons	22
Assistant Surgeons.....	15

DISMISSED.

Surgeons	00
Assistant Surgeons	2

DECEASED.

Surgeons	1
Assistant Surgeons	3

PBOMOTED.

Assistant Surgeons to be Surgeons.	37
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MUSTERED-OUT.

Surgeons	124
Assistant Surgeons	138

H.

ROSTER OF SURGEONS AND ASSISTANT SURGEONS.

FIRST REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Oct. 24, 1861	Robert Fletcher	Surgeon ..	Resigned Nov. 13, '63; now Surg. U.S.V.
Feb. 22, 1864	J. Cullen Barr	Surgeon ..	Mustered out with regiment.
Aug. 27, 1861	Albert Wilson	Asst. Surg.	Promoted to Surg. 113th, Aug. 1, 1863.
Aug. 21, 1862	J. C. Barr	"	Promoted to Surgeon.
April 22, 1864	A. J. Brockett	"	Must. out by expiration term of service.

SECOND REGIMENT O. V. I.

Aug. 27, 1861	D. E. Wade	Surgeon ..	Resigned, January 23, 1862.
Feb. 23, 1862	B. F. Miller	"	Must. out Oct. 10, 1864, with regiment.
Aug. 27, 1861	B. F. Miller	Asst. Surg.	Promoted to Surgeon.
Feb. 28, 1862	Thomas J. Shannon....	"	Promoted to Surgeon 116th, July 26, '63.
Aug. 22, 1862	W. A. Carmichael.....	"	Must. out Oct. 10, 1864, with regiment.

THIRD REGIMENT O. V. I.

June 12, 1861	R. R. McMeans	Surgeon ..	Died October 30, 1862.
Oct. 31, 1862	Wm. L. Peck	"	Mustered out by expiration of service.
June 12, 1861	H. H. Seys	Asst. Surg.	Promoted to Surg. 15th, July 22, 1862.
July 5, 1862	T. F. Eaton	"	Declined to accept com.
Aug. 21, 1862	F. S. Clason	"	Resigned August 25, 1863.
Sept. 8, 1863	D. N. Kinsman.....	"	Declined to accept com.
Oct. 6, 1863	Wesley H. Race	"	Must'd out by expiration term of serv.

FOURTH REGIMENT O. V. I.

April....1861	H. H. McAbee	Surgeon ..	Resig'd Sept. 16, '63; kil. shortly aft. by
Sept. 16, 1863	F. W. Morrison	"	Must. out at exp'n of serv. [R.R. accd.
Aug. 21, 1861	Albert Longwell.....	Asst. Surg.	Resigned October 27, 1862.
July 31, 1862	F. W. Morrison	"	Promoted to Surgeon.
Nov. 29, 1862	John B. Laird	"	Resigned July, 1863.
Jan. 18, 1864	D. M. Willson	"	Declined commission.
May 17, 1864	Barzelia Gray	"	Mustered out July 12, 1865.

FIFTH REGIMENT O. V. I.

June 11, 1861	A. Ball	Surgeon ..	Must'd out at expira'n of term of serv.
Aug. 26, 1864	A. E. Jenner	"	" with regiment, July 8, '65.
Aug. 3, 1862	Curtis J. Bellows	Asst. Surg.	Honorably discharged Sept. 10, 1862.
July 4, 1862	Wm. F. Tibballs.....	"	Resigned Sept. 27, 1864.
Feb. 6, 1863	O. G. Field	"	" Oct. 15, 1863.
Nov. 7, 1863	J. G. Junkin.....	"	Mustered out with regt., July 3, 1865.

SIXTH REGIMENT O. V. I.

June 18, 1861	Starling Loving	Surgeon ..	Resigned October 20, 1861.
Oct. 20, 1861	A. H. Stevens.....	"	Must'd out at expirat'n of term of serv.
June 18, 1861	F. W. Ames	Asst. Surg.	Resigned June 12, 1863.
Sept. 6, 1862	S. B. Houts	"	Never mustered.
May 6, 1863	W. W. Fountain.....	"	Resigned August 8, 1863.
Aug. 11, 1863	Israel Bedell.....	"	Mustered out June 23, 1864.

Roster of Surgeons and Assistant Surgeons—Continued.

SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 10, 1861	Francis Salter	Surgeon ..	Resigned November 2, 1862.
Dec. 1, 1862	C. J. Bellows	"	Mustered out with regiment.
Sept. 9, 1861	Chas. E. Denig	Asst. Surg.	Resigned November 1, 1862.
Nov. 11, 1862	E. Hitchcock	"	Resigned June 2, 1862.
April 14, 1863	John C. Fergusson	"	Dismissed November 23, 1863.
June 30, 1863	A. Belding	"	Declined commission.
July 17, 1863	David Williams	"	Must'd out at expirat'n of term of serv.

EIGHTH REGIMENT O. V. I.

Sept. 7, 1861	Wm. H. Lamme	Surgeon ..	Resigned November 26, 1861.
Nov. 27, 1861	Thos. M. Ebright	"	January 2, 1862.
Mar. 5, 1863	J. L. Brenton	"	Must'd out at expirat'n term of service.
July 8, 1861	Samuel Lexton	Asst. Surg.	Resigned October 23, 1862.
Aug. 21, 1862	B. F. Culver	"	February 19, 1863.
Dec. 30, 1862	Freeman A. Tuttle	"	March 5, 1864.
Aug. 11, 1863	J. S. Pollock	"	Must'd out at expirat'n term of service.

NINTH REGIMENT O. V. I.

May 28, 1861	Chas. E. Boyle	Surgeon ..	Resigned April 29, 1863.
May 19, 1863	Conrad Solheim	"	Mustered out with regt., June 7, 1864.
Oct. 23, 1861	Conrad Solheim	Asst. Surg.	Promoted to Surgeon.
Aug. 21, 1862	Jas. Davenport	"	Died in service, March 29, 1863.
July 27, 1863	A. M. Beers	"	Mustered out with regiment.

TENTH REGIMENT O. V. I.

June 6, 1861	C. S. Muscroft	Surgeon ..	Resigned June 9, 1863.
June 23, 1863	Homer C. Shaw	"	Mustered out with regt., June 17, 1864.
June 6, 1861	John B. Rice	Asst. Surg.	Promoted Surgeon 72d, Nov., 1861.
Nov. 25, 1861	Homer C. Shaw	"	Promoted to Surgeon.
Sept. 1, 1862	Frank E. Powers	"	Resigned May 8, 1863.
May 8, 1863	Joseph H. Van Deman ..	"	May, 1864.

ELEVENTH REGIMENT O. V. I.

July 7, 1861	J. Frank Gabriel	Surgeon ..	Resigned September 25, 1862.
Oct. 26, 1862	John McCurdy	"	Mustered out with regt., June 21, 1864.
July 7, 1861	Henry C. Gill	Asst. Surg.	Resigned July 16, 1862.
July 11, 1862	S. Hudson	"	October 1, 1862.
July 9, 1862	A. C. McNutt	"	February 8, 1863.
Dec. 2, 1862	N. H. Sidwell	"	Mustered out with regt., June 21, 1864.
Aug. 11, 1863	A. B. Hartman	"	"

TWELFTH REGIMENT O. V. I.

Nov. 9, 1861	W. W. Holmes	Surgeon ..	U. S. Volunteers, April 25, 1862. Resigned, to accept commission as Surgeon.
May 1, 1862	Wm. T. Ridenour	"	Resigned Dec. 28, 1862.
Dec. 28, 1862	N. F. Graham	"	Mustered out July 11, 1864.
Nov. 9, 1861	Wm. T. Ridenour	Asst. Surg.	Promoted to Surgeon.
May 1, 1862	James B. Webb	"	Resigned Dec. 1, 1862.
July 13, 1862	N. F. Graham	"	Promoted to Surgeon.
Dec. 30, 1862	Horace P. Kay	"	Mustered out July 11, 1864.
May 5, 1863	Silas T. Buck	"	"

Roster of Surgeons and Assistant Surgeons—Continued.

THIRTEENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
June 26, 1862	Samuel D. Taney	Surgeon ..	Transf'd Asst. Surg. U. S. V. Feb. 14, '63.
May 18, 1863	Allen Jones	"	Mustered out at expiration of service.
Aug. 26, 1862	E. Y. Chase	Asst. Surg	Resigned Sept 17, 1862.
Sept. 17, 1862	J. W. Smith	"	Dismissed April 1, 1863.
Dec. 30, 1862	James McCready	"	Mustered out.
June 5, 1863	John K. More	"	Mustered out.
May 2, 1863	S. M. Leeds	"	

FOURTEENTH REGIMENT O. V. I.

Aug. 16, 1861	W. C. Daniels	Surgeon ..	Resigned November 7, 1862.
Nov. 7, 1862	Geo. E. Sloat	"	Resigned November 3, 1864.
Feb. 28, 1865	E. King Nash	"	Mustered out with reg't July 11, 1865.
Sept. 9, 1861	Geo. E. Sloat	Asst. Surg.	Promoted Surgeon.
Aug. 2, 1862	Chas. M. Eaton	"	Resigned March 4, 1863.
Dec. 30, 1862	Chas. E. Ames	"	Promoted Surgeon 60th O. V. I.
April 6, 1863	E. King Nash	"	Promoted Surgeon.
July 30, 1864	Thos. J. Cronise	"	Declined commission.

FIFTEENTH REGIMENT O. V. I.

Sept. 20, 1861	Orrin Ferris	Surgeon ..	Resigned March 15, 1862.
Mar. 18, 1862	Henry Spillman	"	Died in line of duty.
June 2, 1862	D. S. Hall	"	Resigned July 1, 1862.
July 22, 1862	H. H. Seyes	"	" Sept. 1, 1864.
Sept. 28, 1864	Wm. J. Kelly	"	" October, 1864.
Oct. 14, 1864	Wm. M. Clarke	"	
Oct. 24, 1861	George Liggett	Asst. Surg.	Resigned July 13, 1862.
July 13, 1862	Wm. J. Kelly	"	Promoted Surgeon.
Aug. 13, 1862	David Welch	"	" " 33d, April 3, 1863.
July 20, 1863	W. M. Clark	"	Promoted Surgeon.
April 3, 1865	J. B. Young	"	

SIXTEENTH REGIMENT O. V. I.

Sept. 7, 1861	Basil B. Rrashear	Surgeon ..	[31, 1864. Mustered out by expiration of term, Oct.
Nov. 1, 1861	Byron S. Chase	Asst. Surg.	Promoted Surg. U. S. C. regt. May 19, '63.
Aug. 2, 1862	Isaac N. Ellsbury	"	[President. Dismissed Oct. 19, '63, by direction of
July 9, 1863	O. Pomeroy	"	Resigned March 22, 1864.
July 13, 1864	John W. Vandervoort ..	"	Mustered out by expiration of term of service, Oct. 31, 1864.

SEVENTEENTH REGIMENT O. V. I.

Oct. 2, 1861	W. S. Schenck	Surgeon ..	Resigned — 12, 1862.
Dec. 23, 1862	Henry J. Herrick	"	Mustered out Sept. 26, 1864.
Jan. 22, 1865	J. E. Fowler	"	Resigned May 30, 1865.
June 6, 1865	D. D. Benedict	"	Mustered out with reg't. July 16, 1865.
Sept. 28, 1861	E. Sinnet	Asst. Surg.	Resigned Jan. 18, 1862.
Feb. 4, 1862	Henry J. Herrick	"	Promoted Surgeon.
Dec. 30, 1862	D. D. Benedict	"	" "

EIGHTEENTH REGIMENT O. V. I.

Sept. 24, 1861	Wm. P. Johnson	Surgeon ..	Mustered out Nov. 1864.
Feb. 20, 1865	Horace P. Kay	"	Mustered out with reg't. Oct. 9, 1865.
Sept. 24, 1861	Wm. M. Mills	Asst. Surg.	Resigned.
Aug. 21, 1862	W. Fobes	"	Resigned Oct. 22, 1862.
Jan. 8, 1863	Chas. H. French	"	Mustered out Oct. 1864.
May 10, 1865	A. C. Newell	"	Mustered out with reg't. Oct. 9, 1865.
May 29, 1865	Samuel C. Baxter	"	Mustered out with reg't. Oct. 9, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

NINETEENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Oct. 1, 1862	Fred. T. Hurxthal	Surgeon ..	Dismissed March 14, 1863.
Mar. —, 1863	Benj. F. Failor	"	Resigned April 1, 1865.
April 10, 1865	A. H. Lowers	"	
Oct. 3, 1861	B. F. Failor	Asst. Surg.	Promoted Surgeon.
July 5, 1862	A. H. Lowers	"	"
April 30, 1863	Robert McNeilly	"	Resigned August 22, 1864.
April 10, 1865	J. H. Biteman	"	Died in Texas September 25, 1865.

TWENTIETH REGIMENT O. V. I.

Sept. 7, 1861	Edward L. Hill	Surgeon ..	Resigned September 18, 1864.
Oct. 3, 1864	H. B. Fricker	"	Mustered out with reg't. July 15, 1865.
Sept. 9, 1861	John G. Purple	Asst. Surg.	Died in service May 13, 1862.
May 3, 1862	H. B. Fricker	"	Promoted Surgeon.
Aug. 21, 1862	J. W. Guthrie	"	Mustered out with reg't. July 15, 1865.

TWENTY-FIRST REGIMENT O. V. I.

Sept. 19, 1861	Wm. M. Eames	Surgeon ..	Resigned October 3, 1862.
Oct. 3, 1862	Daniel S. Young	"	Mustered out with reg't. July 25, 1865.
Sept. 19, 1861	"	Asst. Surg.	Promoted Surgeon.
Aug. 21, 1862	Richard Gray, Jr.	"	Mustered out with reg't. July 25, 1865.
Dec. 8, 1862	W. C. Payne	"	Resigned August 13, 1863.
June —, 1865	H. H. Crethers	"	Declined commission.

TWENTY-SECOND REGIMENT O. V. I.

Aug. 27, 1861	John B. Bell	Surgeon ..	Resigned February 11, 1862.
Feb. 19, 1862	H. E. Foote	"	Mustered out with reg't. Nov. 3, 1864.
Aug. 27, 1861	A. M. Brown	Asst. Surg.	Promoted Surgeon 68th, Sept. 29, 1864.
Aug. 21, 1862	W. H. Gilmore	"	Resigned May 24, 1863.

TWENTY-THIRD REGIMENT O. V. I.

July 2, 1861	Jos. T. Webb	Surgeon ..	Mustered out with reg't. July 26 1865.
July 2, 1861	John McCardy	Asst. Surg.	Promoted Surgeon 11th, Oct. 26, 1862.
July 4, 1862	Jos. E. Barrett	"	Promoted Surgeon 194th, Mar. 14, 1865.
April 23, 1864	James McClure	"	Mustered out with Reg't. July 26, 1865.
May 10, 1865	E. Y. King	"	" " " "

TWENTY-FOURTH REGIMENT O. V. I.

July 2, 1861	David Welsh	Surgeon ..	Resigned July 26, 1861.
July 26, 1861	George R. Weeks	"	Transferred to Surg. U. S. V. Feb. 19, '63
May 30, 1863	J. M. Cooke	"	Mustered out July, 1864.
July 24, 1861	"	Asst. Surg.	Promoted to Surgeon.
Aug. 19, 1862	H. Y. Smith	"	Resigned June 23, 1863.
July 24, 1863	E. M. Howland	"	Mustered out July 1864.

TWENTY-FIFTH REGIMENT O. V. I.

July 26, 1861	T. G. Myer	Surgeon ..	Resigned 1864.
July 30, 1864	William Walton	"	
July 2, 1861	George R. Weeks	Asst. Surg.	Promoted Surgeon 24th.
Sept. 7, 1861	Lawrence L. Andrews ..	"	Resigned May 22, 1863.
July 13, 1862	William T. Dean	"	Died in service, September 17, 1862.
Oct. 7, 1862	William Walton	"	Promoted Surgeon.
July 30, 1864	E. M. Wilson	"	

Roster of Surgeons and Assistant Surgeons—Continued.

TWENTY-SIXTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
July 2, 1861	M. M. Stimmel.....	Surgeon..	Resigned May 14, 1863.
May 11, 1863	W. B. McGavran....	"	" September, 1864.
Sept. 26, 1864	David Rush.....	"	" June, 1865.
July 17, 1865	Lewis Slusser.....	"	
July 2, 1861	Andrew Sabine.....	Asst. Surg.	Promoted Surgeon 76th.
Mar. 11, 1863	Wm. H. Cretcher....	"	Resigned May 16, 1863.
Aug. 27, 1862	D. Richards.....	"	" February 22, 1863.
Mar. 12, 1863	W. B. McGavran....	"	Promoted Surgeon.
June 20, 1863	D. S. Hall.....	"	Declined commission.
July 20, 1863	David Rush.....	"	Promoted Surgeon.
Sept. 28, 1864	F. W. Inman	"	Declined commission..
Oct. 3, 1864	James G. Carr.....	"	

TWENTY-SEVENTH REGIMENT O. V. I.

Aug. 1, 1861	W. R. Thrall.....	Surgeon..	Resigned March 12, 1863.
Mar. 12, 1863	Jacob. C. Denise....	"	Mustered out November 14, 1864.
Nov. 1, 1864	Isaac Young	"	Mustered out with regiment July 11, 1865.
Aug. 19, 1861	J. C. Denise.....	Asst. Surg.	Promoted Surgeon.
July 24, 1862	James Sprague.....	"	Resigned May 25, 1864.
April 16, 1863	G. W. Garver.....	"	Declined commission.
May 11, 1863	Isaac Young	"	Promoted Surgeon.
April 11, 1865	John L. Chapel.....	"	Mustered out with regiment July 11, 1865.

TWENTY-EIGHTH REGIMENT O. V. I.

June 10, 1861	Gerhard Saal.....	Surgeon..	Resigned January 21, 1863.
Feb. 26, 1863	Charles E. Denig....	"	Must. out at exp. of term of service, July
June 10, 1861	Adolph Schoenbeim..	Asst. Surg.	Resigned April, 1863. [23, 1864.
May 1, 1863	George Connell.....	"	Declined commission.
June 30, 1863	A. E. Jenner.....	"	Must. out at exp. of term of service, July
July 4, 1862	Geo. B. Hackenberg..	"	Resigned February 14, 1863. [23, 1864.
July 24, 1863	Joseph Hebble.....	"	Never mustered.

TWENTY-NINTH REGIMENT O. V. I.

Aug. 23, 1861	N. K. Tifield.....	Surgeon..	Resigned August 12, 1864.
Aug. 29, 1864	E. P. Haines.....	"	Resigned.
July 7, 1865	Thomas B. Miser....	"	Mustered out with regiment July 13, 1865.
Oct 13, 1861	Sylvester Burrowes..	Asst. Surg.	Resigned January 26, 1863.
Aug. 21, 1862	Cyrus Hosack.....	"	" August 7, 1863.
Jan. 26, 1863	E. P. Haines	"	Promoted Surgeon.
Aug. 24, 1864	Thomas B. Miser....	"	"

THIRTIETH REGIMENT O. V. I.

Aug. 23, 1861	Henry T. Grier.....	Surgeon..	Resigned Nov. 12, 1861.
Nov. 19, 1861	Joseph B. Potter....	"	Mustered out with regiment Aug. 18, 1865.
Aug. 30, 1861	C. B. Richards.....	Asst. Surg.	Resigned to accept staff position.
Aug. 5, 1861	P. F. Beverly.....	"	Resigned April 6, 1863.
July 4, 1862	D. B. Wren.....	"	Declined commission.
July 20, 1863	Orange Fisher.....	"	Never mustered.

THIRTY-FIRST REGIMENT O. V. I.

Sept. 13, 1861	Jason W. Arter.....	Surgeon..	Mustered out September, 1864.
Oct. 4, 1864	Elias S. Chapel.....	"	Mustered out with regiment July 20, 1865.
Sept. 5, 1861	J. L. Mounts.....	Asst. Surg.	Resigned January 11, 1863.
July 4, 1862	L. Holland.....	"	Resigned 1864.
Feb. 4, 1863	E. S. Chapel.....	"	Promoted Surgeon.
Mar. 11, 1863	Royal N. Varney ...	"	Mustered out with regiment July 20, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

THIRTY-SECOND REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 21, 1861	John N. Mowry.....	Surgeon..	Resigned Jan. 22, 1862.
Feb. 13, 1862	James G. Buchanan..	"	March 13, 1863.
Jan. 18, 1863	Alfred H. Brundage..	"	Mustered out August 31, 1864.
Sept. 21, 1864	Thomas P. Bond....	"	" with regiment July 20, 1865.
Aug. 31, 1861	Alfred H. Brundage..	Asst. Surg.	Promoted Surgeon.
July 4, 1862	Silas E. Sheldon....	"	Dismissed March 13, 1863.
Mar. 11, 1863	John Morgan.....	"	Resigned February 19, 1864.
June 12, 1863	G. S. Guthrie.....	"	Died in service February 20, 1864.
April 1, 1864	Thomas P. Bond....	"	Promoted Surgeon.
April 30, 1864	L. A. Grimes.....	"	Dismissed July 23, 1864.
Sept. 7, 1864	A. J. Patterson	"	Declined commission.
Sept. 20, 1864	William H. Putt....	"	" "
Oct. 1, 1864	John A. Soliday....	"	Died in service March 26, 1865.
ne 10, 1865	C. K. Clarke.....	"	Mustered out with regiment July 20, 1865.

THIRTY-THIRD REGIMENT O. V. I.

July 21, 1861	F. B. Mussey	Surgeon..	Resigned August 27, 1862.
Feb. 8, 1863	George W. Brooke..	"	Declined commission.
April 3, 1863	David Welsh	"	Resigned September 21, 1864.
Oct. 3, 1864	Lyonel J. Smith....	"	Mustered out with regiment July 12, 1865.
May 26, 1862	B. Mosenmier.....	Asst. Surg.	Resigned October 24, 1863.
Aug. 21, 1862	J. H. Hair.....	"	July 30, 1863.
an. 4, 1864	William T. Ropp....	"	Mustered out with regiment July 12, 1865.

THIRTY-FOURTH REGIMENT O. V. I.

Aug. 27, 1861	Jacob Y. Cantwell..	Surgeon..	Resigned January 23, 1862.
Jan. 30, 1862	W. R. S. Clarke.....	"	July 30, 1862.
Aug. 27, 1862	John H. Ayres.....	"	Mustered out February 27, 1865.
Aug. 31, 1861	W. R. S. Clarke.....	Asst. Surg.	Promoted Surgeon.
Jan. 16, 1862	John H. Ayres.....	"	" "
July 4, 1862	Wilson V. Cowan....	"	"
Aug. 27, 1862	C. A. Miller.....	"	Mustered out June 30, 1864.
Mar. 2, 1864	Richard March.....	"	Never mustered.
June 8, 1864	J. P. Shilling.....	"	Mustered out February 22, 1865.

THIRTY-FIFTH REGIMENT O. V. I.

Sept. 7, 1861	P. A. Gordon.....	Surgeon..	Resigned November 17, 1862.
Oct. 8, 1863	F. D. Morris.....	"	Died September 23, 1864.
Oct. 3, 1864	Charles O. Wright..	"	Resigned June 18, 1864.
Aug. 21, 1861	Francis D. Morris...	Asst. Surg.	" August 7, 1862.
Aug. 19, 1862	Charles O. Wright..	"	Promoted to Surgeon.
Nov. 13, 1862	Charles H. Landis..	"	Mustered out April 30, 1864.
July 24, 1863	Michael Hawes.....	"	Never mustered.

THIRTY-SIXTH REGIMENT O. V. I.

Aug. 26, 1861	R. N. Barr.....	Surgeon..	Resigned February 26, 1862.
Mar. 8, 1862	J. H. Whilford.....	"	Mustered out with regiment July 27, 1865.
Aug. 23, 1861	J. H. Whilford.....	Asst. Surg.	Promoted Surgeon.
Mar. 8, 1862	Colin McKenzie.....	"	Resigned May 19, 1863.
July 4, 1862	John Dickerson.....	"	Promoted Surgeon 195th.
July 24, 1863	John P. Welsh.....	"	Resigned September 18, 1864.
April, — 1865	B. F. Holcomb.....	"	Mustered out with regiment July 27, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

THIRTY-SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Oct. 3, 1861	Conrad Schenck....	Surgeon..	Resigned Feb. 26, 1862.
Feb. 26, 1862	Julius C. Schenck...	"	" Nov. 20, 1862.
Feb. 26, 1863	A. C. Swartzwelder.	"	Transferred Asst. Surg. U. S. V.
June 6, 1863	Wm. Arnold.....	"	Mustered out.
Oct. 5, 1863	Aug. Weidenbach...	"	"
April 28, 1864	Fred. Hohly.....	"	Mustered out with regiment.
Sept. 7, 1861	J. C. Schenck.....	Asst. Surg.	Promoted Surgeon.
July 4, 1862	Louis Gessner.....	"	Resigned Jan. 1, 1863.
Dec. 5, 1862	Eugene Ringler....	"	Promoted Surgeon 106th.
Jan. 31, 1863	A. W. Billhardt.....	"	Resigned Oct. 13, 1864.

THIRTY-EIGHTH REGIMENT O. V. I.

June 10, 1861	Israel Coons.....	Surgeon..	Resigned July 13, 1863.
Aug. 20, 1863	James Haller.....	"	Mustered out Jan. 4, 1865.
Jan. 20, 1865	H. B. Powell.....	"	Mustered out with regiment July 12, 1865.
June 10, 1861	James Haller.....	Asst. Surg.	Promoted Surgeon.
Aug. 21, 1862	W. K. Hughes.....	"	Resigned.
July 14, 1861	H. B. Powell.....	"	Promoted Surgeon.
May 8, 1864	T. D. Brooks.....	"	Honorably discharged April 18, 1865.

THIRTY-NINTH REGIMENT O. V. I.

Aug. 20, 1861	O. W. Nixon.....	Surgeon..	Resigned May 31, 1862.
June 17, 1862	Thos. W. McArthur.	"	" Sept. 3, 1862.
Sept. 9, 1862	John A. Follett....	"	Mustered out with regiment July 9, 1865.
May 31, 1861	Thos. W. McArthur.	Asst. Surg.	Promoted Surgeon.
Sept. 3, 1862	Christian Forster...	"	Promoted Surgeon 58th.
Aug. 19, 1862	John A. Follett....	"	Promoted Surgeon.
Sept. 5, 1862	Lyonel J. Smith....	"	Promoted Surgeon 33d O. V. I.
Dec. 13, 1862	Pierre S. Starr.....	"	Mustered out with regiment July 9, 1865.
April 9, 1865	W. J. Andrews.....	"	" " "

FORTIETH REGIMENT O. V. I.

Sept. 7, 1861	Alex. McBride.....	Surgeon..	Resigned March 26, 1862.
April 1, 1862	John N. Beach.....	"	Mustered out with regiment.
Oct. 3, 1861	Joseph C. Kalb.....	Asst. Surg.	Resigned Jan. 6, 1863.
Aug. 21, 1862	A. E. Isaminger....	"	Mustered out with regiment.
Feb. 8, 1862	W. H. Matchett.....	"	Mustered out.

FORTY-FIRST REGIMENT O. V. I.

Aug. 29, 1861	Thos. G. Cleveland..	Surgeon..	Resigned May 17, 1862.
May 12, 1862	John C. Hubbard...	"	" Aug. 30, 1862.
Aug. 30, 1862	Albert G. Hart.....	"	" Nov., 1864.
Sept. 12, 1862	B. H. Cheney.....	Asst. Surg.	" Aug. 22, 1864.
Sept. 5, 1861	Albert G. Hart.....	"	Promoted Surgeon.
Sept. 8, 1862	W. C. Catlin.....	"	Resigned Feb 18, 1863.
Mar. 11, 1863	John W. Bugh.....	"	Dismissed.
Aug 27, 1864	C. E. Tupper.....	"	

Roster of Surgeons and Assistant Surgeons—Continued.

FORTY-SECOND REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 7, 1861	Joel Pomerine.....	Surgeon..	Resigned July 26, 1863.
Oct. 23, 1863	J. C. Kalb.....	"	" Aug. 29, 1864.
Oct. 3, 1861	Jos. W. Harmon....	Asst. Surg.	" Nov. 9, 1862.
Feb. 28, 1863	J. C. Kalb.....	"	Promoted Surgeon.
Aug. 26, 1862	J. N. Miner.....	"	Died, December 13, 1862.
Mar. —, 1862	John W. Driscoll....	"	Resigned July 1, 1863.
Nov. 10, 1863	H. E. Warner.....	"	Declined commission.
Jan. 6, 1864	H. McFadden.....	"	Mustered out with regiment Dec. 2, 1864.

FORTY-THIRD REGIMENT O. V. I.

Sept. 11, 1861	Clark McDermott...	Surgeon..	Resigned December, 1861.
Dec. 4, 1861	F. M. Rose.....	"	Mustered out with regiment July 13, 1865.
Dec. 4, 1861	F. M. Rose.....	Asst. Surg.	Promoted Surgeon.
June 20, 1862	Wm. S. Bell.....	"	Resigned March 29, 1864.
Sept. 5, 1862	C. Morrow.....	"	"
June 6, 1864	Charles E. Poe.....	"	Mustered out with regiment July 13, 1865.
Mar. 10, 1865	Wesley Anderson...	"	" " "

FORTY-FOURTH REGIMENT O. V. I.

Sept. 23, 1861	H. M. Steele.....	Surgeon..	Mustered out Sept. 30, 1864.
Nov. 1, 1864	M. J. Bowland.....	"	Transferred to 8th O. V. C.
Sept. 23, 1861	John H. Rodgers....	Asst. Surg.	Promoted Surgeon 104th.
July 4, 1862	Douglass Luce.....	"	Mustered out.
Mar. 11, 1863	B. F. Davis.....	"	Transferred to 8th O. V. C.
May 10, 1864	M. J. Bowland.....	"	Promoted Surgeon.

FORTY-FIFTH REGIMENT O. V. I.

July 22, 1862	Thos. H. Reamey...	Surgeon..	Mustered out with regiment June 12, 1865.
Aug. 15, 1862	Julius J. Sheldon...	Asst. Surg.	Mustered out Nov. 6, 1864.
Mar. 11, 1863	Robert J. Hill.....	"	Mustered out with regiment June 12, 1865.
July 7, 1862	Henry Besse.....	"	Resigned Nov. 20, 1862.

FORTY-SIXTH REGIMENT O. V. I.

Sept. 11, 1861	James O. Robinson..	Surgeon..	Resigned Oct. 21, 1861.
Nov. 11, 1861	Thos. W. McFadden..	"	Honorably discharged Aug. 9, 1862.
Aug. 26, 1862	W. W. Bridge.....	"	Died in the service Aug. 6, 1864.
Sept. 19, 1864	D. P. Smedley.....	"	Honorably discharged Dec. 29, 1864.
Jan. 17, 1865	Davis Halderman ..	"	Mustered out with regiment July 22, 1865.
Oct. 19, 1861	Greenleaf C. Norton.	Asst. Surg.	Died in service Aug. 10, 1862.
Oct. 4, 1862	D. P. Smedley.....	"	Promoted Surgeon.
Mar. 11, 1863	Davis Halderman ..	"	"
Feb. 17, 1865	C. J. Hagan.....	"	Mustered out with regiment July 22, 1865

FORTY-SEVENTH REGIMENT O. V. I.

Aug. 27, 1861	George A. Spies.....	Surgeon..	Resigned April 14, 1862.
April 18, 1862	Stephen P. Bonner..	"	Mustered out Dec. 24, 1864.
Aug. 27, 1861	Augustus Holtage..	Asst. Surg.	Resigned Jan. 13, 1863.
Feb. 4, 1862	Augustus C. Barlow ..	"	" Nov. 29, 1862.
Dec. 30, 1862	Andrew Davidson ..	"	" July 26, 1863.
Mar. 11, 1863	Jacob Huber.....	"	Promoted Surgeon July 15, 1865.

Roster of Surgeons and Assistant Surgeons.—Continued.

FORTY-EIGHTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 27, 1861	Milton T. Carey	Surgeon ..	Resigned March 11, 1863.
March 1, 1863	Plyn A. Willis	"	Mustered out with regiment.
Oct. 11, 1861	Aaron T. Johnson ..	Asst. Surg.	Resigned March 8, 1863.
Aug. 19, 1862	J. K. Lewis	"	Died Oct. 11, 1862.
Oct. 15, 1862	Plyn A. Willis	"	Promoted Surgeon.
April 4, 1863	C. Hamer Wiles	"	Transferred to 83d O. V. I.
April 16, 1863	Wm. Watt	"	Resigned.

FORTY-NINTH REGIMENT O. V. I.

Aug. 17, 1861	Robt. W. Thrift	Surgeon ..	Resigned 1864.
Sept. 24, 1864	Wm. H. Park	"	
Aug. 17, 1861	Wm. H. Park	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	H. B. Lung	"	Resigned April 27, 1864.
May 10, 1864	S. A. Smith	"	Declined commission.
Aug. 19, 1864	Samuel H. Spencer..	"	

FIFTIETH REGIMENT O. V. I.

July 9, 1862	Geo. Keifer	Surgeon ..	Resigned Dec. 26, 1863
Dec. 24, 1863	Samuel K. Crawford	"	Mustered out Dec. 31, 1864.
Dec. 31, 1864	Jas. T. Wood	"	Mustered out 101st regiment June 26, 1865.
July 9, 1862	Samuel K. Crawford	Asst. Surg.	Promoted Surgeon.
Aug. 22, 1862	Nahemiah Cole	"	Resigned April, 1865.
Dec. 31, 1864	Geo. Sadler	"	Mustered out with regt. June 26, 1865.

FIFTY-FIRST REGIMENT O. V. I.

Oct. 3, 1861	W. C. Woodworth ..	Surgeon ..	Transferred, Surgeon U. S. V.
June 25, 1864	E. D. W. C. Wing...	"	
Sept. 23, 1861	Martin Hagan	Asst. Surg.	Resigned Nov. 26, 1862.
Oct. 28, 1862	G. W. Mitchell	"	Declined commission.
Nov. 5, 1862	E. D. W. C. Wing...	"	Promoted Surgeon.
Mar. 11, 1863	R. P. Jennings	"	
May 10, 1865	L. E. Weagley	"	

FIFTY-SECOND REGIMENT O. V. I.

April 26, 1862	Joel Moore	Surgeon ..	Resigned May 9, 1863.
May 9, 1863	Henry M. Duff	"	" Sept. 7, 1864.
Oct. 23, 1864	N. S. Hill	"	Mustered out with regiment June 3, 1865.
July 7, 1862	Henry M. Duff	Asst. Surg.	Promoted Surgeon.
Sept. 5, 1862	A. J. Rosa	"	Died February 20, 1864.
July 10, 1863	D. Ridenour	"	Never mustered
May 19, 1864	S. A. Simpson	"	Mustered out with regiment June 3, 1865.

FIFTY-THIRD REGIMENT O. V. I.

Oct. 3, 1861	Wm. M. Cake	Surgeon ..	Resigned Sept. 20, 1864.
Nov. 17, 1864	John A. Lair	"	Mustered out with regiment Aug. 11, 1865.
Oct. 3, 1861	James P. Ring	Asst. Surg.	Resigned Aug. 31, 1862.
Aug. 19, 1862	John A. Lair	"	Promoted Surgeon.
Sept. 17, 1863	R. L. Vanhaslingen .	"	Promoted Surgeon.
Nov. 17, 1864	Samuel Mathers	"	Died in service May 23, 1865.
June 15, 1865	W. F. Hani	"	Mustered out with regiment Aug. 11, 1865

Roster of Surgeons and Assistant Surgeons.—Continued.

FIFTY-FOURTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 27, 1861	C. P. Brent	Surgeon ..	Resigned Jan. 30, 1865.
Feb. 10, 1865	James Baggs	"	Mustered out with regiment Aug. 15, 1865.
Oct. 9, 1861	Thomas L. Harper ..	Asst. Surg.	Resigned Aug. 1, 1863.
Aug. 28, 1862	James Baggs	"	Promoted Surgeon.
April 10, 1865	D. H. Cowan	"	Declined to muster.

FIFTY-FIFTH REGIMENT O. V. I.

Oct. 3, 1861	Jay Kling	Surgeon ..	Mustered out.
Nov. 1, 1864	Joseph Hibble	"	Mustered out with regiment July 11, 1865.
Oct. 3, 1861	Henry K. Spooner ..	Asst. Surg.	Promoted Surgeon 98th.
July 4, 1862	J. L. Morris	"	Never mustered.
Feb. 24, 1864	Joseph Hibble	"	Promoted Surgeon.
Jan. 25, 1864	James C. Myers	"	Mustered out with regiment July 11, 1865.

FIFTY-SIXTH REGIMENT O. V. I.

Oct. 3, 1861	W. N. King	Surgeon ..	Resigned August 28, 1863.
	David Williams	"	Mustered out November 25, 1864.
Dec. 14, 1864	P. M. McFarland	"	
Oct. 3, 1861	W. C. Payne	Asst. Surg.	Resigned April 8, 1862.
April 1, 1862	N. H. Fisher	"	Died January 25, 1863.
April 1, 1863	Jacob W. Knouff	"	Declined commission.
Aug. 21, 1862	P. M. McFarland	"	Promoted Surgeon.
July 24, 1863	J. S. Pollock	"	Declined commission.

FIFTY-SEVENTH REGIMENT O. V. I.

Oct. 3, 1861	John P. Haggett	Surgeon ..	Died in service April 3, 1862.
May 26, 1862	Wm. D. Carlin	"	" " December 26, 1862.
April 28, 1862	A. C. Messenger	"	Mustered out December 3, 1864.
Dec. 14, 1864	Robert H. Millikan ..	"	Mustered out with regiment Aug. 14, 1865.
Nov. 14, 1861	Lafayette Woodruff ..	Asst. Surg.	Resigned April 28, 1862.
Oct. 3, 1861	A. C. Messenger	"	Promoted Surgeon.
Oct. 11, 1862	J. C. Maris	"	Declined commission.
April, 1863	R. P. Johnson	"	" "
May 7, 1863	Jacob W. Knouff	"	Resigned April 5, 1864.
July 24, 1863	S. D. Steer	"	Never mustered.
May 10, 1864	Robert H. Millikan ..	"	Promoted Surgeon.
April 22, 1865	G. M. Frazer	"	Mustered out with regiment Aug. 14, 1865.

FIFTY-EIGHTH REGIMENT O. V. I.

Oct. 7, 1861	Rainer Shallem	Surgeon ..	Resigned April 6, 1862.
Nov. 18, 1862	Christian Forester ..	"	Mustered out by expira'n of term of service
Jan. 9, 1862	Engene Ringler	Asst. Surg.	Transferred to 37th, April 30, 1862.
Oct. 25, 1862	A. McElwee	"	Resigned December 8, 1862.
Dec. 23, 1862	Eli Dayton	"	Mustered out January 14, 1865.
Aug. 21, 1862	Bruno Lankriet	"	Died Oct. 27, 1862.

FIFTY-NINTH REGIMENT O. V. I.

Oct. 27, 1861	Abram C. McChesney ..	Surgeon ..	Mustered out October 9, 1864.
Nov. 6, 1861	Charles F. Wilbur ..	Asst. Surg.	Resigned June 22, 1862.
July 4, 1862	Fred. Swingley	"	Resigned Nov. 26, 1862.
Aug. 25, 1862	S. C. Gordon	"	Mustered out October 9, 1864.
Feb. 20, 1863	N. J. Barber	"	" " "

Roster of Surgeons and Assistant Surgeons—Continued.

SIXTIETH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 28, 1861	David Noble.....	Surgeon..	Mustered out.
Oct. —, 1864	Nath. H. Richardson.	"	Resigned.
Jan. 9, 1862	R. A. Dwyer.....	Ass't Surg.	Resigned May 7, 1862.
May 3, 1862	Henry T. Grier.....	"	Mustered out.
April 20, 1864	John M. Evans.....	"	Honorably discharged February, 1865.
May 2, 1865	Jas. F. Thompson...	"	Mustered out with regiment July 28, 1865.
April 18, 1864	Chas. E. Ames.....	Surgeon..	" " "

SIXTY-FIRST REGIMENT O. V. I.

Oct. 5, 1861	Enoch Pearce	Surgeon..	Transferred to U. S. V. Staff.
Nov. 1, 1863	H. K. Spooner	"	Mustered out March 31, 1865.
Oct. 16, 1861	Wm. S. More.....	Ass't Surg.	Killed at battle of Gettysburg.
Aug. 27, 1862	J. J. Cowlan.....	"	Honorably discharged September 14, 1863.
Nov. 16, 1863	L. P. Culver.....	"	Promoted Surgeon 82d O. V. I.

SIXTY-SECOND REGIMENT O. V. I.

Oct. 28, 1861	Chas. H. Hood.....	Surgeon..	Resigned January 27, 1863.
Feb. 10, 1863	Augustus C. Barlow.	"	" August 23, 1865.
Nov. 25, 1861	Thos. J. Haines.....	Ass't Surg.	" September 17, 1862.
Aug. 26, 1862	Wm. I. Wolfley.....	"	" June 2, 1864.
Aug. 27, 1862	John Truman.....	"	" " 26, 1863.
Feb. 27, 1864	John A. Saylor.....	"	Transferred to 61st regiment Sept. 1, 1865.

SIXTY-THIRD REGIMENT O. V. I.

Oct. 7, 1861	Isaac L. Crane.....	Surgeon..	Resigned January 28, 1863.
Jan. 28, 1863	Arthur B. Monahan.	"	Mustered out with regiment July 8, 1865.
Oct. 7, 1861	Arthur B. Monahan.	Ass't Surg.	Promoted Surgeon.
Aug. 21, 1862	J. O. Marsh.....	"	Resigned October 27, 1862.
Mar. 11, 1863	John B. McDill.....	"	" June 2, 1865.
Aug. 4, 1863	John C. Bigham.....	"	Declined commission.

SIXTY-FOURTH REGIMENT O. V. I.

Oct. 3, 1861	Henry O. Mack.....	Surgeon..	Resigned August 2, 1862.
Aug. 2, 1862	Abram McMahon...	"	Transferred to U. S. V. Staff.
July 25, 1864	Hugh P. Anderson..	"	
Nov. 7, 1861	Hugh P. Anderson..	Ass't Surg.	Promoted Surgeon.
Aug. 21, 1862	V. G. Miller.....	"	Resigned May 26, 1863.
June 30, 1863	A. Potter.....	"	" November 9, 1863.
July 25, 1864	Moses H. Quinn....	"	

SIXTY-FIFTH REGIMENT O. V. I.

Oct. 3, 1861	John G. Kyle.....	Surgeon..	Resigned September 8, 1862.
Oct. 7, 1862	I. M. Todd.....	"	Resigned.
Jan. —, 1864	J. M. Cruthers.....	"	
Nov. 14, 1861	John C. Gill.....	Ass't Surg.	Resigned June 24, 1862.
Aug. 21, 1862	W. M. McCully.....	"	Promoted Surgeon U. S. C. regiment.
Oct. 7, 1862	W. S. Patterson.....	"	Resigned.
July 13, 1864	C. J. Hagan.....	"	Declined commission.
Sept. 21, 1864	J. A. Dickson.....	"	"
Feb. 15, 1865	W. E. Patterson....	"	Resigned October 20, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

SIXTY-SIXTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 26, 1861	Thos P Bond	Surgeon ..	Resigned September 12, 1862.
Sept. 13, 1862	J. W. Brooks	"	Mustered out with regiment July 15, 1865.
Nov. 5, 1861	J. W. Brooks	Ass't Surg.	Promoted Surgeon.
Mar. 13, 1863	B. F. Ludlum	"	Mustered out with regiment July 15, 1865.

SIXTY-SEVENTH REGIMENT O. V. I.

Oct. 10, 1861	Samuel F. Forbes....	Surgeon ..	Resigned October 7, 1863.
Oct. 7, 1863	James Westfall.....	"	
Jan. 9, 1862	James Westfall.....	Ass't Surg.	Promoted Surgeon.
Aug. 21, 1862	C. Coxton	"	Resigned March 7, 1863.
May 9, 1863	J. H. Van Deman ...	"	Never mustered.
Nov. 3, 1863	A. S. Combs	"	

SIXTY-EIGHTH REGIMENT O. V. I.

Nov. 6, 1861	Eugene B. Harrison..	Surgeon ..	Honorably discharged.
Sept. 26, 1864	M. A. Brown	"	Mustered out.
Oct. 21, 1861	B. F. Berkley	Ass't Surg.	Resigned December 31, 1862.
Feb. 11, 1863	D. C. Rathburne	"	Declined commission.
Aug. 19, 1862	S. C. Chase	"	Resigned October 31, 1862.
April 28, 1863	W. C. Catlin	"	Declined commission.
July 20, 1863	Wm. Massie	"	Resigned August 20, 1864.
July 13, 1864	L. B. Vorhees	"	Declined commission.
Oct. 25, 1864	E. C. De Forrest	"	"
Dec. 8, 1864	John G. Bigham	Surgeon ..	Mustered out with regiment July 10, 1865.

SIXTY-NINTH REGIMENT O. V. I.

Feb. 12, 1862	Lewis Slusser	Surgeon ..	Mus. out by expir'n of time, Apr. 10, 1865.
April 22, 1865	R. A. Stephenson....	"	Mustered out with regiment July 17, 1865.
Oct. 3, 1861	Moses B. Haines	Ass't Surg.	Resigned September 14, 1862.
Aug 15, 1862	M. A. Frost	"	April 25, 1863.
Dec. 18, 1862	Jas. M. Kuhn	"	Declined commission.
April 4, 1863	R. A. Stephenston...	"	Promoted Surgeon.

SEVENTIETH REGIMENT O. V. I.

Oct. 24, 1861	C. H. Swain	Surgeon ..	Resigned August 1, 1863.
Aug. 1, 1863	R. L. Van Harlinger..	"	Mustered out with reg't August 14, 1865.
Dec. 11, 1861	T. G. Farrell	Ass't Surg.	Mus. out by exp'n term of serv. Dec. 10, 1864.
Sept. 17, 1862	F. Jaeger	"	Resigned January 24, 1864.
June 7, 1864	I. M. Shoemaker	"	

SEVENTY-FIRST REGIMENT O. V. I.

Oct. 28, 1861	C. M. Hoagland	Surgeon ..	Resigned September 7, 1863.
Nov. 10, 1863	C. N. Hoagland	"	
Jan. 9, 1862	Wm. M. Crain	Ass't Surg.	
Sept. 17, 1862	S. R. Wakefield	"	

Roster of Surgeons and Assistant Surgeons—Continued.

SEVENTY-SECOND REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Nov. 25, 1861	J. B. Rice.....	Surgeon..	Resigned 1864.
Jan. 31, 1865	C. B. Richards.....	"	Declined commission.
June 5, 1865	W. S. Gaines.....	"	Never mustered.
Nov. 6, 1861	Wm. M. Kaull.....	Asst. Surg.	Resigned June 4, 1863.
Aug. 21, 1862	J. W. Goodson.....	"	Dismissed for absence.
April 1, 1863	Wm. Cauldwell.....	"	Honorably discharged Jan. 4, 1864.
Jan. 31, 1865	Jacob Stamp.....	"	Declined commission.
Mar. 10, 1865	W. W. Fountain.....	"	" "
April 10, 1865	F. F. Falk.....	"	" "

SEVENTY-THIRD REGIMENT O. V. I.

Oct. 20, 1861	Jonas P. Safford....	Surgeon..	Resigned Feb. 18, 1863.
Jan. 1, 1863	Isaac N. Himes.....	"	Mustered out Jan. 18, 1865.
Feb. 1, 1865	John C. Preston.....	"	Mustered out with regiment July 20, 1865.
Oct. 20, 1861	Isaac N. Himes.....	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	James Ligafos.....	"	Resigned Oct. 24, 1862.
Mar. 18, 1863	Wm. Richeson.....	"	" June 27, 1864.
Mar. 19, 1863	J. C. Preston.....	"	Promoted Surgeon.
Feb. 1, 1865	S. D. Steer.....	"	Mustered out with regiment July 20, 1865.

SEVENTY-FOURTH REGIMENT O. V. I.

Nov. 5, 1861	J. R. Bralsford.....	Surgeon..	Resigned Nov. 8, 1864.
Dec. 5, 1864	M. M. Dickson.....	"	Mustered out with regiment July 10, 1865.
Jan. 9, 1862	E. W. Steele	Asst. Surg.	Resigned June 4, 1862.
June 17, 1862	Wm. Arnold.....	"	Promoted Surgeon 37th.
July 4, 1862	A. L. Williams.....	"	Dismissed.
Dec. 23, 1862	M. M. Dickson.....	"	Promoted Surgeon.
June 9, 1863	Wm. Hays	"	"
June 8, 1865	C. A. Moore.....	"	Mustered out with regiment July 10, 1865.

SEVENTY-FIFTH REGIMENT O. V. I.

Jan. 11, 1862	Samuel Hart	Surgeon..	Transferred to U. S. V. Staff.
May 15, 1863	Charles L. Wilson..	"	Resigned October 2, 1863.
Nov. 23, 1863	John Ingram.....	"	Mustered out with regiment Jan. 17, 1865.
Dec. 28, 1861	Charles L. Wilson..	Asst. Surg.	Promoted Surgeon.
July 4, 1862	H. W. Owen.....	"	Resigned Nov. 28, 1862.
Nov. 15, 1862	John Hill.....	"	" May 26, 1863.
June 29, 1863	D. B. Wren.....	"	" July 26, 1864.
Aug. 25, 1864	John A. Jamme.....	"	"

SEVENTY-SIXTH REGIMENT O. V. I.

Jan. 9, 1862	Charles R. Pierce....	Surgeon..	Died January 29, 1863.
Feb. 16, 1863	Andrew Sabine.....	"	Mustered out with regiment July 15, 1865.
Nov. 6, 1861	Thomas B. Hood....	Asst. Surg.	Resigned January 26, 1863.
Dec. 23, 1862	George E. Smith....	"	" " 4, 1863.
Aug. 21, 1862	Robert P. Muenschor	"	Died October 2, 1863.
Feb. 16, 1863	S. C. Mendenhall....	"	Mustered out with regiment July 15, 1865.
June 20, 1863	R. E. Foote.....	"	Never mustered.

SEVENTY-SEVENTH REGIMENT O. V. I.

Oct. 28, 1861	James W. Warfield..	Surgeon..	Resigned August, 1864.
Aug. 10, 1864	Andrew Wall.....	"	"
Oct. 26, 1861	Pardon Cook.....	Asst. Surg.	Died September 23, 1863.
Sept. 8, 1862	Andrew Wall.....	"	Promoted Surgeon.
Sept. 3, 1864	M. Valentine.....	"	Declined commission.

Roster of Surgeons and Assistant Surgeons—Continued.

SEVENTY-EIGHTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Nov. 2, 1861	Samuel J. Reeves..	Surgeon..	Mustered out with regiment July 11, 1865.
Nov. 26, 1861	S. C. Mendenhall...	Asst. Surg.	Resigned April 20, 1862.
April 20, 1862	W. Morrow Beach..	"	Promoted Surgeon 118th.
Aug. 26, 1862	J. D. Wortman.....	"	Resigned Feb. 14, 1863.
Aug. 11, 1863	E. C. DeForrest.....	"	Never Mustered.
May 25, 1864	George C. Peckham..	"	Mustered out with regiment July 11, 1865
May 31, 1865	R. D. Webb.....	"	" " "

SEVENTY-NINTH REGIMENT O. V. I.

Aug. 19, 1862	W. P. Elstun.....	Surgeon..	Resigned February 5, 1863.
Feb. 5, 1863	H. A. Langdon.....	"	Mustered out with regiment June 9, 1865.
Aug. 15, 1862	H. A. Langdon.....	Asst. Surg.	Promoted Surgeon.
July 28, 1862	A. M. Johnson.....	"	Declined commission.
Aug. 25, 1862	W. A. Swander.....	"	Resigned December 26, 1863.
May 7, 1863	John E. Jones.....	"	Mustered out with regiment June 9, 1865'

EIGHTIETH REGIMENT O. V. I.

Jan. 8, 1862	Ezekiel P. Buell....	Surgeon..	Mustered out January 7, 1865.
Jan. —, 1865	C. W. Bevinger.....	"	Mustered out with regiment Aug. 13, 1865.
Jan. 8, 1862	Samuel H. Lee.....	Asst. Surg.	Resigned April 3, 1862.
Aug. 21, 1862	G. Bambaek.....	"	" July 26, 1863.
Oct. 9, 1863	E. Y. Clark.....	"	Declined commission.
May 12, 1863	C. W. Buvinger.....	"	Promoted Surgeon.
April 3, 1865	Thomas B. Eagle....	"	Declined commission.
July 11, 1865	H. G. Tope.....	"	Mustered out with regiment Aug 13, 1865.

EIGHTY-FIRST REGIMENT O. V. I.

Nov. 27, 1861	W. H. Lamme.....	Surgeon..	Resigned March 31, 1862.
April 1, 1862	R. G. McClean.....	"	" November 6, 1862.
Dec. 23, 1862	W. C. Jacobs.....	"	Mustered out with regiment July 13, 1865.
June 2, 1862	C. R. Reed.....	Asst Surg.	Resigned October, 1862.
Aug. 19, 1862	J. Whittaker.....	"	Mustered out with regiment July 13, 1865.
Mar. 11, 1863	H. M. Shaffer.....	"	Mustered out Aug. 24, 1864.

EIGHTY-SECOND REGIMENT O. V. I.

Jan. 1, 1862	J. Y. Cantwell.....	Surgeon..	Transferred to U. S. V. Staff.
April 27, 1864	C. W. Myers.....	"	Resigned June, 1865.
June 13, 1865	L. P. Culver.....	"	Mustered out July 24, 1865.
Dec. 26, 1861	A. W. Munson.....	Asst. Surg.	Resigned April 4, 1863.
July 4, 1862	C. W. Myers.....	"	Promoted Surgeon.
July 24, 1863	L. P. Culver.....	"	" "
April 27, 1864	W. B. Hedges.....	"	Mustered out July 24, 1865.

EIGHTY-THIRD REGIMENT O. V. I.*

Aug. 19, 1862	John S. McGrew....	Surgeon..	Transferred to U. S. V. Staff.
Aug. 21, 1864	George Cassidy.....	"	Transferred Surgeon 182d O. V. I.
Jan. 18, 1865	Plyn A. Willis.....	"	Mustered out with regiment July 24, 1865.
Aug. 19, 1862	Marion Wilkerson...	Asst. Surg.	Resigned August 31, 1863.
Sept. 10, 1862	George Cassidy.....	"	Promoted Surgeon.
Jan. 18, 1865	C. Hamer Wiles....	"	Mustered out with regiment July 24, 1865.

* Three months' regiment.

Roster of Surgeons and Assistant Surgeons—Continued.

EIGHTY-FOURTH REGIMENT O. V. I.*

Date.	Name.	Rank.	Remarks.
June 10, 1862	Benj. B. Leonard....	Surgeon ..	Mustered out with regt., Sept. 20, 1862.
June 11, 1862	Jas. W. Thompson ..	Asst. Surg.	" " " "

EIGHTY-FIFTH REGIMENT O. V. I.*

June 10, 1862	L. C. Brown.....	Surgeon ..	Mustered out with regiment. Since died.
"	John E. Darby	Asst. Surg.	" " " Sept. 23, 1862.

EIGHTY-SIXTH REGIMENT O. V. I.*

June 13, 1862	John N. Mowry.....	Surgeon ..	Mustered out with regiment.
June 17, 1862	John Hill	Asst. Surg.	" " " "

EIGHTY-SIXTH REGIMENT O. V. I.†

July 9, 1863	W. R. S. Clark.....	Surgeon ..	Mustered out with regiment.
July 3, 1863	W. C. Catlin	Asst. Surg.	Resigned September 17, 1863.
Sept. 18, 1863	W. B. Hedges.....	"	" " " "

EIGHTY-SEVENTH REGIMENT O. V. I.*

June 23, 1862	Robt. N. Barr.....	Surgeon ..	Mustered out with regiment.
June 7, 1862	Orlando C. Miller...	Asst. Surg.	" " " "

EIGHTY-EIGHTH REGIMENT O. V. I.*

June 20, 1862	Alex. McBride	Surgeon ..	Mustered out with regiment.
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EIGHTY-EIGHTH REGIMENT O. V. I.‡

July 1, 1863	A. Longwell	Surgeon ..	Died in service, March 18, 1865.
Mar. 23, 1865	Henry E. Warner...	"	Mustered out with regiment, July 3, 1865.
July 21, 1863	J. H. Cruthers.....	Asst. Surg.	Promoted Surgeon 65th.
Dec. 17, 1863	Henry E. Warner...	"	Promoted Surgeon.
Mar. 23, 1865	W. W. Fountain....	"	Mustered out with regiment, July 3, 1865.
May 3, 1865	J. P. Shilling	"	" " " "

EIGHTY-NINTH REGIMENT O. V. I.

Aug. 19, 1862	Harvey Bradley	Surgeon ..	Resigned March 23, 1863. [1863.
April 21, 1863	Alfred Taylor.....	"	Drowned while on way to regt., May 23,
May 23, 1863	S. B. Crew.....	"	Mustered out with regiment, June 7, 1865.
Aug. 15, 1862	S. B. Crew.....	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	Colin Spence	"	Resigned May 28, 1863.
July 24, 1863	E. F. Purdum	"	Mustered out with regiment, June 7, 1865.

NINETIETH REGIMENT O. V. I.

Aug. 19, 1862	R. H. Tipton.....	Surgeon ..	Mustered out with regiment, June 13, '65.
Aug. 15, 1862	H. W. Carpenter....	Asst. Surg.	Resigned May 18, 1863.
Aug. 19, 1862	J. Wiley.....	"	" November 5, 1862,
Nov. 5, 1862	C. P. O'Hanlon	"	Mustered out with regiment, June 13, '65.
June 2, 1863	J. P. Coates	"	Resigned December 18, 1863.

* Three months' regiment. † Six months' regiment. ‡ Three years' regiment.

Roster of Surgeons and Assistant Surgeons—Continued.

NINETY-FIRST REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	G. H. Carpenter	Surgeon ..	Resigned May 23, 1863.
May 23, 1863	J. B. Warwick.....	"	Mustered out with regiment, June 24, '65.
Aug. 15, 1862	Thos. McGooney	Asst. Surg.	Resigned September 13, 1862.
Aug. 19, 1862	J. B. Warwick.....	"	Promoted Surgeon.
Sept. 17, 1862	W. S. Newton.....	"	Promoted Surgeon 193d O. V. I.
Aug. 11, 1863	Granville S. Wellons	"	Mustered out with regiment, June 24, '65.
Mar. 31, 1865	D. G. Alling	"	" " " "

NINETY-SECOND REGIMENT O. V. I.

Aug. 19, 1862	J. D. Cotton	Surgeon ..	Mustered out with regiment, June 10, '65.
Aug. 15, 1862	N. B. Sisson	Asst. Surg.	Resigned August 15, 1864.
Aug. 20, 1863	J. D. Howell.....	"	" April 29, 1863.
Aug. 4, 1863	Edwin Booth.....	"	Never mustered.
May 13, 1864	A. M. Beers.....	"	Mustered out with regiment, June 10, '65.

NINETY-THIRD REGIMENT O. V. I.

Aug. 19, 1862	Geo. R. Ashman	Surgeon ..	Resigned August 22, 1864.
Sept. 19, 1864	James M. Weaver...	"	Mustered out June 8, 1865.
Aug. 15, 1862	E. Dillon Bowers ...	Asst. Surg.	Promoted Surgeon 185th O. V. I.
Aug. 19, 1862	James M. Weaver...	"	Promoted Surgeon.
Mar. 24, 1865	M. L. Brooks, Jr.....	"	Mustered out June 8, 1865.

NINETY-FOURTH REGIMENT O. V. I.

Aug. 26, 1862	E. Sinnet.....	Surgeon ..	Resigned, September 9, 1863.
Sept. 9, 1863	W. B. Gibson.....	"	Mustered out June 5, 1865.
Aug. 19, 1862	W. B. Gibson	Asst. Surg.	Promoted Surgeon.
Aug. 3, 1862	L. C. Fouts	"	Resigned April 18, 1863.
Aug. 1, 1863	J. Risley	"	Declined commission.
Jan. 6, 1864	Edwin Booth	"	" " "
April 7, 1864	D. W. Humphreville	"	Mustered out with regiment. June 5, '65.

NINETY-FIFTH REGIMENT O. V. I.

Aug. 19, 1862	H. Z. Gill	Surgeon ..	Resigned May 22, 1864.
June 10, 1864	Chas. T. Wilbur	"	Mustered out with regiment, Aug. 18, '65.
Aug. 18, 1862	Chas. T. Wilbur	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	E. P. Hoover	"	Resigned 1864.
June 27, 1864	William S. Gaines ...	"	Promoted Surgeon 72d O. V. I.

NINETY-SIXTH REGIMENT O. V. I.

Aug. 19, 1862	D. Henderson	Surgeon ..	Resigned April 2, 1863.
April 2, 1863	J. F. Hess	"	Mustered out.
Aug. 14, 1862	J. F. Hess	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	Wm. J. Sullivan	"	Resigned September 28, 1863.
June 1, 1863	Geo. W. Ramage.....	"	Honorably discharged, December 12, '64.

NINETY-SEVENTH REGIMENT O. V. I.

Aug. 19, 1862	Thos. W. Gordon....	Surgeon ..	Resigned June, 1864.
July 5, 1864	T. A. Steward	"	Mustered out with regiment, June 14, '65.
Aug. 15, 1862	Jas. T. Edwards	Asst. Surg.	Resigned September 12, 1862.
Aug. 19, 1862	T. A. Steward	"	Promoted Surgeon.
April 4, 1863	Jos. W. Cadwell	"	Mustered out with regiment, June 14, '65.

Roster of Surgeons and Assistant Surgeons—Continued.

NINETY-EIGHTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 16, 1862	H. West.....	Surgeon..	Resigned October 14, 1863.
Nov. 12, 1863	F. W. Barseilles	"	Died May 1, 1864.
May 10, 1864	W. A. McCracken...	"	Mustered out with regiment June 1, 1865.
Aug. 20, 1862	T. N. Lewis.....	Asst. Surg.	Honorably discharged February, 1863.
Aug. 21, 1862	W. T. Sharpe.....	"	Resigned September 14, 1863.
Nov. 4, 1863	W. A. McCracken...	"	Promoted Surgeon.
May 10, 1864	C. P. Simon.....	"	Mustered out with regiment June 1, 1865.
March, 1865	C. A. Moore.....	"	Never mustered.

NINETY-NINTH REGIMENT O. V. I.

Aug. 19, 1862	James T. Woods....	Surgeon..	Transferred to 50th O. V. I., Dec. 30, 1864.
Aug. 15, 1862	George J. Wood....	Asst. Surg.	Dismissed October 13, 1862.
Aug. 20, 1862	P. H. Clemons.....	"	Promoted Surgeon U. S. colored regiment.
Mar. 22, 1863	Samuel T. Storer...	"	Dismissed April 8, 1864.
May 10, 1864	George Sadler.....	"	Transferred to 50th O. V. I., Dec. 30, 1864.

ONE HUNDREDTH REGIMENT O. V. I.

Aug. 19, 1864	George A. Collamon.	Surgeon..	Mustered out with regiment June 20, 1865.
July 4, 1862	E. Hitchcock	Asst. Surg.	Never mustered.
Aug. 19, 1862	William H. Thacker.	"	Discharged October 1, 1863.
Sept. 8, 1862	Robert Johnson.....	"	Mustered out with regiment June 20, 1865.

ONE HUNDRED AND FIRST REGIMENT O. V. I.

Aug. 12, 1862	T. M. Cook	Surgeon..	Mustered out with regiment June 12, 1865.
Aug. 15, 1862	George S. Yingling.	Asst. Surg.	Resigned January 15, 1863.
Aug. 19, 1862	Walter Caswell.....	"	July 23, 1863.
Aug. 21, 1863	Henry T. Lacey.....	"	December 1, 1864.
April, 1865	H. H. Russell.....	"	Mustered out with regiment June 12, 1865.

ONE HUNDRED AND SECOND REGIMENT O. V. I.

Aug. 26, 1862	A. V. Patterson.....	Surgeon..	Mustered out with regiment June 30, 1865.
Aug. 9, 1862	George Mitchell....	Asst. Surg.	" " " "
Sept. 13, 1862	G. W. Sayres.....	"	Died of disease December 26, 1862.
Mar. 30, 1863	Aaron J. Irwin.....	"	Promoted Surgeon 2d Tenn. April 19, 1864.

ONE HUNDRED AND THIRD REGIMENT O. V. I.

Aug. 19, 1862	L. D. Griswold.....	Surgeon..	Resigned July 15, 1864.
Aug. 1, 1864	D. H. Brinkerhoff...	"	"
Aug. 15, 1862	D. H. Brinkerhoff...	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	George Butler	"	Resigned May 29, 1863.
Aug. 11, 1863	R. S. Stansbury.....	"	January 23, 1864.
Aug. 9, 1864	T. M. Andrews.....	"	Died October 9, 1864.
April 1, 1865	Jacob B. Casebeer...	"	"

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND FOURTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	Kessey G. Thomas..	Surgeon..	Resigned December 27, 1862.
Feb. 8, 1863	John H. Rodgers....	"	Mustered out December 13, 1864.
Jan. 4, 1865	D. T. Boynton.....	"	Resigned May 15, 1865.
June 13, 1865	S. E. Sheldon.....	"	Mustered out with regiment June 19, 1865.
April 11, 1862	N. R. McKenzie.....	Asst. Surg.	Resigned January 20, 1863.
Aug. 22, 1862	C. C. Stofor.....	"	Declined commission.
Sept. 4, 1862	R. P. Johnson.....	"	Resigned February 5, 1863.
Mar. 30, 1863	D. T. Boynton.....	"	Promoted Surgeon.
May 23, 1863	S. E. Sheldon.....	"	" "
June 31, 1865	Isreal Bedell.....	"	Declined commission.
June 30, 1865	D. H. Cowan	"	Never mustered.

ONE HUNDRED AND FIFTH REGIMENT O. V. I.

Aug. 19, 1862	C. N. Fowler.....	Surgeon..	Mustered out with regiment June 3, 1865.
Aug. 19, 1862	H. S. Taft	Asst. Surg.	Dismissed February 18, 1864.
Sept. 4, 1862	J. G. Paulding.....	"	Resigned April 8, 1863.
June 30, 1863	John Trumbull	"	Mustered out June 3, 1865.

ONE HUNDRED AND SIXTH REGIMENT O. V. I.

Sept. 4, 1862	George A. Spies.....	Surgeon..	Resigned February 24, 1863.
Mar. 20, 1863	A. F. Shroen.....	"	" January 30, 1864.
Feb. 22, 1864	Eugene Ringler.....	"	Mustered out with regiment June 29, 1865.
Oct. 24, 1862	Adolph F. Shroen...	Asst. Surg.	Promoted Surgeon.
July 24, 1863	A. E. Westbrook.....	"	Mustered out with regiment June 29, 1865.

ONE HUNDRED AND SEVENTH REGIMENT O. V. I.

Aug. 26, 1862	Charles A. Hartman..	Surgeon..	Killed at bat. of Fredericksb'g, May 9, '63.
June 9, 1863	Hubert Shopp.....	"	Resigned November 9, 1863.
Feb. 10, 1864	John Knaus.....	"	Mustered out with regiment July 10, 1865.
Sept. 4, 1862	And. Wannenwietsh..	Asst. Surg.	Resigned February 22, 1863.
Dec. 19, 1862	John Knauss	"	Promoted Surgeon.
April 10, 1863	H. Niedermeyer.....	"	Resigned July 28, 1863.
March 8, 1864	Frantz Shill.....	"	Mustered out with regiment July 10, 1865.

ONE HUNDRED AND EIGHTH REGIMENT O. V. I.

Aug. 19, 1862	A. Zipperlin.....	Surgeon..	Mustered out with Regiment June 9, 1865.
Sept. 4, 1862	C. F. Hetlick.....	Asst. Surg.	Honorably discharged Dec. 9, 1862.
Dec. 24, 1862	Hubert Shopp.....	"	Promoted Surgeon 107th O. V. I.
July 20, 1863	Henry Ulrich.....	"	Dismissed July 27, 1864.
Sept. 28, 1864	J. C. Myers.....	"	Declined commission.
Dec. 7, 1864	Lucius Mills.....	"	Resigned.
May 16, 1865	Adolph Matzdorff..	"	Mustered out with regiment June 9, 1865.

ONE HUNDRED AND TENTH REGIMENT O. V. I.

Sept. 4, 1862	S. Pixley.....	Surgeon..	Resigned May 1, 1863.
May 1, 1863	R. R. McCandlass...	"	Mustered out with regiment June 25, 1865.
Aug. 26, 1862	R. R. McCandlass...	Asst. Surg.	Promoted Surgeon.
Aug. 20, 1862	T. C. Owen.....	"	Resigned April 20, 1864.
July 20, 1863	H. H. Bishop.....	"	Declined commission.
April 1, 1864	A. W. Pinkerton	"	Resigned August 20, 1864.
July 13, 1864	W. H. Park.....	"	Mustered out with regiment June 25, 1865.
Sept. 5, 1864	E. P. Ebersole	"	" " " "

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND ELEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	Lyman A. Brewer.....	Surgeon ..	Mustered out with reg't, June 27, 1865.
Sept. 10, 1862	D. H. Silver	Asst. Surg.	Died June 27, 1864.
Sept. 13, 1862	C. M. Chalfant.....	"	Transferred to U. S. Colored Troops.
July 10, 1864	John W. Ulock	"	Mustered out with reg't, June 27, 1865.

ONE HUNDRED AND THIRTEENTH REGIMENT O. V. I.

Aug. 19, 1862	Jas. R. Black	Surgeon ..	Resigned July 31, 1863.
Aug. 1, 1863	Albert Wilson	"	Mustered out with reg't, July 6, 1865.
Sept. 1, 1862	Alonzo Harlow.....	Asst. Surg.	Resigned May 11, 1863.
Sept. 3, 1862	T. C. Tipton	"	" June 8, 1863.
May 19, 1863	George W. Kemp.....	"	" Oct. 6, 1863.
July 20, 1863	H. M. Bassett.....	"	Promoted Surgeon 121st O. V. I.

ONE HUNDRED AND FOURTEENTH REGIMENT O. V. I.

Aug. 20, 1862	O. E. French	Surgeon ..	Mustered out November 27, 1864.
Nov. 27, 1864	Byron Stanton.....	"	Transferred Ass't Surgeon U. S. V.
June 5, 1865	John C. Gill	"	Mustered out with reg't, July 31, 1865.
Aug. 22, 1862	H. Leonardson.....	Asst. Surg.	Resigned June 20, 1863.
Nov. 7, 1862	A. A. Bean	"	" April 15, 1863.
July 18, 1863	Thos. C. Baird.....	"	Transferred to 48th O. V. I., July 19, '65.
Aug. 20, 1862	W. L. Peck.....	"	Promoted Surgeon 3d Reg't O. V. I.
Nov. 27, 1864	John C. Gill	"	Promoted Surgeon.

ONE HUNDRED AND FIFTEENTH REGIMENT O. V. I.

Sept. 1, 1862	H. B. Johnson	Surgeon ..	Resigned February 17, 1865.
Mar. 11, 1865	W. H. Jones.....	"	Mustered out with reg't, June 22, 1865.
Sept. 1, 1862	J. L. Brenton.....	Asst. Surg.	Promoted Surgeon 8th O. V. I.
Sept. 23, 1862	A. Jones Patterson....	"	Resigned 1864.
April 1, 1863	W. H. Jones.....	"	Promoted Surgeon.
May 30, 1864	Geo. H. Barrowes.....	"	Declined commission.
Sept. 15, 1864	A. B. Beers	"	" "
Aug. 8, 1864	L. D. Richards.....	"	" "
Sept. 19, 1864	J. W. Reed	"	Mustered out with reg't, June 22, 1865.

ONE HUNDRED AND SIXTEENTH REGIMENT O. V. I.

Sept. 4, 1862	A. R. Gilkey	Surgeon ..	Died June 4, 1863.
July 26, 1863	Thos. J. Shannon	"	Killed in battle, October 19, 1864.
Dec. 27, 1864	F. Curtis Smith.....	"	Mustered out with reg't, June 14, 1865.
Aug. 19, 1862	John Q. A. Hudson ...	Asst. Surg.	Resigned March 24, 1863.
Mar. 27, 1863	T. Curtis Smith.....	"	Promoted Surgeon.
Aug. 22, 1862	James Johnson	"	Resigned February 19, 1863.
April 14, 1863	James L. Brown.....	"	" October, 1864.
Jan. 5, 1865	John Sampsell.....	"	Mustered out with reg't, June 14, 1865.
Feb. 16, 1865	James T. Munroe	"	Never mustered.

ONE HUNDRED AND SEVENTEENTH REGIMENT O. V. I.*

Sept. 8, 1862	J. L. Firestone.....	Surgeon ..	Mustered out with reg't, July 25, 1865.
Sept. 19, 1862	C. M. Finch	Asst. Surg.	Transferred to 9th O. V. C.
Dec. 11, 1862	W. C. Payne.....	"	Declined commission.
Dec. 22, 1862	S. Albright	"	Resigned August 18, 1863.
May 8, 1863	Silas E. Sheldon.....	"	Never mustered.
July 21, 1863	Wm. T. Evans.....	"	" "
Aug. 12, 1863	E. G. Hard	"	Resigned August 23, 1864.
Nov. 10, 1863	N. B. Lafferty.....	"	" January 9, 1865.
January, 1865	Henry C. Beard.....	"	Mustered out with reg't, July 25, 1865.
Feb. 1, 1865	George A. E. Corry....	"	" " " "

* First Regiment Ohio Heavy Artillery.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND EIGHTEENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	Wm. H. Phillips	Surgeon ..	Resigned May 7, 1864.
June 3, 1864	W. Morrow Beach	"	Mustered out with reg't, June 24, 1865.
Aug. 27, 1862	H. A. Bodman	Asst. Surg.	Resigned December 3, 1862.
Dec. 26, 1862	N. S. Richardson	"	Promoted Surgeon 13th O. V. C.
Sept. 5, 1862	W. B. Shaffer	"	Resigned February 3, 1864.
April 27, 1864	John E. Patterson	"	Mustered out with reg't, June 24, 1865.

ONE HUNDRED AND NINETEENTH REGIMENT O. V. I.

Aug. 25, 1862	O. E. Davis	Surgeon ..	Mustered out by failure of reg't to or-
Aug. 19, 1862	A. Buckingham	Asst. Surg.	" " " " [ganize.
Aug. 29, 1862	A. J. Patterson	"	" " " " " "

ONE HUNDRED AND TWENTIETH REGIMENT O. V. I.

Sept. 4, 1862	W. W. Taggart	Surgeon ..	Resigned November 13, 1862.
Dec. 26, 1862	Byron Stanton	"	Transferred Surgeon 114th O. V. I.
Sept. 1, 1862	J. W. Hammond	Asst. Surg.	Resigned August 5, 1863.
Sept. 4, 1862	C. C. Stofer	"	" Jan. 26, 1864.
Feb. 23, 1864	John C. Gill	"	Transferred Asst. Surgeon 114th O. V. I.

ONE HUNDRED AND TWENTY-FIRST REGIMENT O. V. I.

Sept. 3, 1862	T. B. Williams	Surgeon ..	Resigned April, 1865.
April 12, 1865	H. M. Bassett	"	Mustered out with reg't, June 8, 1865.
Sept. 3, 1862	S. S. Scoville	Asst. Surg.	Resigned May 4, 1863.
Sept. 8, 1862	N. S. Hill	"	Promoted Surgeon 62d O. V. I.
May 30, 1862	S. T. Critchfield	"	Never mustered.
April 1, 1864	George A. Haise	"	" "

ONE HUNDRED AND TWENTY-SECOND REGIMENT O. V. I.

Sept. 4, 1862	Thaddens A. Reamy ..	Surgeon ..	Resigned June 5, 1863.
Jan'y 5, 1863	Wm. M. Houston	"	Mustered out with reg't, June 26, 1865.
Sept. 8, 1862	Wm. M. Houston	Asst. Surg.	Promoted Surgeon.
Jan'y 16, 1863	Alvah Richards	"	Promoted Surgeon 126th O. V. I.
Feb'y 8, 1863	W. G. Bryant	"	Promoted Surgeon 197th O. V. I.

ONE HUNDRED AND TWENTY-THIRD REGIMENT O. V. I.

Sept. 4, 1862	O. Ferris	Surgeon ..	Resigned December 1, 1864.
Dec. 5, 1864	W. B. Hyatt	"	Mustered out with reg't, June 12, 1865.
Sept. 16, 1862	J. H. Williams	Asst. Surg.	Resigned January 25, 1864.
Oct. 4, 1862	W. B. Hyatt	"	Promoted Surgeon.
M'rch 22, 1864	N. B. Brisbane	"	Mustered out with reg't, June 12, 1865.

ONE HUNDRED AND TWENTY-FOURTH REGIMENT O. V. I.

Aug. 20, 1862	J. W. Smith	Surgeon ..	Resigned January 31, 1863.
M'rch 11, 1863	D. C. Patterson	"	Mustered out with reg't, July 9, 1865.
Aug. 15, 1862	George Connell	Asst. Surg.	Resigned.
Aug. 19, 1862	D. C. Patterson	"	Promoted Surgeon.
M'rch 11, 1863	D. A. Morse	"	Honorably discharged, August 12, 1863.
April 21, 1863	T. S. Bidwell	"	Mustered out with reg't, July 9, 1865.

Roster of Surgeons and Assistant Surgeons.—Continued.

ONE HUNDRED AND TWENTY-FIFTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 20, 1862	H. McHenry.....	Surgeon ..	Resigned.
June 9, 1865	Wm. E. McKim.....	"	Mustered out with regiment Oct., 1865.
Aug. 21, 1862	Porter Yates.....	Asst. Surg.	Resigned May 6, 1863.
Aug. 23, 1862	J. E. Darby	"	Declined commission.
May 24, 1863	J. G. Buchanan.....	"	Resigned.
Mar. 19, 1865	Wm. E. McKim.....	"	Promoted Surgeon.

ONE HUNDRED AND TWENTY-SIXTH REGIMENT O. V. I.

Sept. 2, 1862	W. Estip.....	Surgeon ..	Resigned Feb. 5, 1864.
Feb. 5, 1864	J. Sykes Ely.....	"	" 1864.
Aug. 1, 1864	Ithamer B. Weed ...	"	" Nov. 14, 1864.
Dec. 11, 1864	Alvah Richards.....	"	Mustered out with regiment June 25, 1865.
Nov. 7, 1862	J. Sykes Ely.....	Asst. Surg.	Promoted Surgeon.
Jan. 8, 1863	J. P. Alcom.....	"	Revoked by the Governor.
Mar. 29, 1863	Ithamer B. Weed ...	"	Promote l Surgeon
June 25, 1864	Joshua Worly	"	Mustered out with regiment June 25, 1865.

ONE HUNDRED AND TWENTY-EIGHTH REGIMENT O. V. I.

Feb. 24, 1862	A. H. Woodbridge ..	Surgeon ..	Mustered out with regiment July 13, 1865.
Jan. 4, 1864	Wm. A. Tripp	Asst. Surg.	" " "
Jan. 4, 1864	Porter Yates.....	"	" " "

ONE HUNDRED AND TWENTY-NINTH REGIMENT O. V. I.

June 23, 1863	Gustav. C. E. Weber	Surgeon ..	Resigned 1863.
Aug. 11, 1863	John W. Smith	Asst. Surg.	Mus. out at expiration of term of service.
Aug. 14, 1863	James B. Campbell.	"	" " " " "

ONE HUNDRED AND THIRTIETH REGIMENT OHIO NATIONAL GUARD.*

May 14, 1864	Samnel S. Thorn....	Surgeon ..	Mustered out with regiment Sept. 22, 1864.
May 20, 1864	Calvin Hathaway ..	Asst. Surg.	" " "

ONE HUNDRED AND THIRTY-FIRST REGIMENT O. N. G.*

May 14, 1864	Orson Britton	Surgeon ..	Mustered out with regiment Aug. 25, 1864.
May 14, 1864	Levi B. Lathrop	Asst. Surg.	" " "

ONE HUNDRED AND THIRTY-SECOND REGIMENT O. N. G.*

May 15, 1864	Wm. J. Sullivan	Surgeon ..	Mustered out with regiment Sept. 10, 1864.
May 15, 1864	Richard Edwards...	Asst. Surg.	" " "
May 24, 1864	Albert F. Matson...	"	" " "

ONE HUNDRED AND THIRTY-THIRD REGIMENT O. N. G.*

May 7, 1864	C. P. Landon	Surgeon ..	Mustered out with regiment Aug. 20, 1864.
May 7, 1864	R. N. McConnel.....	Asst. Surg.	" " "
May 21, 1864	David Ridenour	"	" " "

ONE HUNDRED AND THIRTY-FOURTH REGIMENT O. N. G.*

May 6, 1864	James F. Spain.....	Surgeon ..	Mustered out with regiment Aug. 31, 1864.
May 7, 1864	B. F. Baker.....	Asst. Surg.	" " "

* One hundred days' regiments.

Roster of Surgeons and Assistant Surgeons.—Continued.

ONE HUNDRED AND THIRTY-FIFTH REGIMENT O. N. G.*

Date.	Name.	Rank.	Remarks.
May 10, 1864	M. M. Stimmel.....	Surgeon ..	Mustered out with regiment Sept. 1, 1864.
May 8, 1864	David H. Gregory ..	Asst. Surg.	" " "
May 9, 1864	Wm. Jones, jr.....	"	" " "

ONE HUNDRED AND THIRTY-SIXTH REGIMENT O. N. G.*

May 13, 1864	Wm. F. Brown	Surgeon ..	Died in service.
May 13, 1864	Wm. Reed.....	Asst. Surg.	Mustered out.

ONE HUNDRED AND THIRTY-SEVENTH REGIMENT O. N. G.*

May 10, 1864	Wm. B. Davis	Surgeon ..	Mustered out.
May 27, 1864	Chas. Hunt.....	Asst. Surg.	" "
July 16, 1864	Jas. Culbertson.....	"	" "

ONE HUNDRED AND THIRTY-EIGHTH REGIMENT O. N. G.*

May 15, 1864	Chas. P. Wilson	Surgeon ..	Mustered out with regiment Sept. 1, 1864.
June 5, 1864	Amos B. Fuller	Asst. Surg.	" " "
June 21, 1864	Hiram H. Russell...	"	" " "

ONE HUNDRED AND THIRTY-NINTH REGIMENT O. N. G.*

May 23, 1864	John Hill	Surgeon ..	Mustered out with regiment Aug. 26, 1864.
May 22, 1864	B. F. McKennon....	Asst. Surg.	" " "

ONE HUNDRED AND FORTIETH REGIMENT O. N. G.*

May 10, 1864	Daniel C. Rathbone.	Surgeon ..	Mustered out with regiment Sept. 3, 1864.
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ONE HUNDRED AND FORTY-FIRST REGIMENT O. N. G.*

May 11, 1864	Chas. L. Wilson	Surgeon ..	Mustered out with regiment Sept. 3, 1864.
May 19, 1864	James Johnson	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-SECOND REGIMENT O. N. G.*

May 13, 1864	Wilson N. King.....	Surgeon ..	Mustered out with regiment Sept. 2, 1864.
May 13, 1864	Jacob Stamp	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-THIRD REGIMENT O. N. G.

May 14, 1864	Samuel H. Lee.....	Surgeon ..	Mustered out with regiment Sept. 13, 1864.
June 13, 1864	Geo. M. Chandler ...	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-FOURTH REGIMENT O. N. G.*

May 11, 1864	James L. Mountz ...	Surgeon ..	Mustered out with regiment Aug. 31, 1864.
May 12, 1864	G. Moodie White....	Asst. Sarg.	" " "
May 24, 1864	E. F. Baker	"	" " "

ONE HUNDRED AND FORTY-FIFTH REGIMENT O. N. G.*

May 12, 1864	Henry Besse.....	Surgeon ..	Mustered out.
May 12, 1864	John D. Janney	Asst. Surg.	" "

* One hundred days' regiments.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND FORTY-SIXTH REGIMENT O. N. G.*

Date.	Name.	Rank.	Remarks.
May 12, 1864	Isaac L. Drake.....	Surgeon..	Mustered out with regiment Sept. 7, 1864.
May 12, 1864	Otho Evans, Jr.....	Asst. Surg.	" " "
May 16, 1864	Amos Sellers.....	"	" " "

ONE HUNDRED AND FORTY-SEVENTH REGIMENT O. N. G.*

May 16, 1864	Horace Coleman....	Surgeon..	Mustered out with regiment Aug. 30, 1864.
June 22, 1864	H. K. Hershiser.....	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-EIGHTH REGIMENT O. N. G.*

May 18, 1864	Wm. Beebe.....	Surgeon..	Mustered out with regiment Sept. 14, 1864.
May 18, 1864	B. F. Culver.....	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-NINTH REGIMENT O. N. G.*

May 11, 1864	Wm. A. Brown.....	Surgeon..	Mustered out with regiment Aug. 30, 1864.
May 11, 1864	B. F. Miesee.....	Asst. Surg.	" " "

ONE HUNDRED AND FIFTIETH REGIMENT O. N. G.*

May 15, 1864	James W. Smith....	Surgeon..	Mustered out with regiment Aug. 23, 1864.
May 5, 1864	Charles F. Dalton..	Asst. Surg.	" " "
May 5, 1864	James F. Armstrong.	"	" " "

ONE HUNDRED AND FIFTY-FIRST REGIMENT O. N. G.*

May 13, 1864	Wm. H. Harper.....	Surgeon..	Mustered out with regiment Aug. 27, 1864.
May 13, 1864	A. G. Holloway.....	Asst. Surg.	" " "
May 13, 1864	J. R. Keleh.....	"	" " "

ONE HUNDRED AND FIFTY-SECOND REGIMENT O. N. G.*

May 11, 1864	John C. Williamson..	Surgeon..	Mustered out with regiment Sept. 2, 1864.
May 11, 1864	John A. Jobs.....	Asst. Surg.	" " "

ONE HUNDRED AND FIFTY-THIRD REGIMENT O. N. G.*

May 10, 1864	John S. Combs.....	Surgeon..	Mustered out.
May 10, 1864	John O. Marsh.....	Asst. Surg.	" "

ONE HUNDRED AND FIFTY-FOURTH REGIMENT O. N. G.*

May 9, 1864	George Watt.....	Surgeon..	Mustered out with regiment Sept. 1, 1864.
May 9, 1864	Leigh McClung.....	Asst. Surg.	" " "

ONE HUNDRED AND FIFTY-FIFTH REGIMENT O. N. G.*

Aug. 5, 1864	R. S. Stansbury.....	Surgeon..	Mustered out with regiment Aug. 27, 1864.
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ONE HUNDRED AND FIFTY-SIXTH REGIMENT O. N. G.*

May 17, 1864	V. G. Miller.....	Surgeon..	Mustered out with regiment Sept. 1, 1864.
May 17, 1864	Jas. N. Robinson....	Asst. Surg.	" " "
May 17, 1864	Caleb S. Evans.....	"	" " "

* One hundred days' regiments.

Roster of Surgeons and Assistant Surgeons—Continued.
ONE HUNDRED AND FIFTY-SEVENTH REGIMENT O. N. G.*

Date.	Name.	Rank.	Remarks.
May 15, 1864	Wm. M. Eames.....	Surgeon ..	Mustered out with regiment Sept. 6, 1864.
May 15, 1864	Thos. B. Eagle.....	Asst. Surg.	“ “ “ “
May 25, 1864	B. H. Fisher.....	“	“ “ “ “

ONE HUNDRED AND FIFTY-NINTH REGIMENT O. N. G.*

May 10, 1864	Robert Chamberlin..	Surgeon ..	Mustered out Aug. 22, 1864.
May 19, 1864	W. H. Holden.....	Asst. Surg.	“ “ “ “

ONE HUNDRED AND SIXTIETH REGIMENT O. N. G.*

May 13, 1864	John Krops.....	Surgeon ..	Mustered out.
May 13, 1864	Calvin B. Holcomb..	Asst. Surg.	“ “ “ “

ONE HUNDRED AND SIXTY-FIRST REGIMENT O. N. G.*

.....	Martin G. Hajin....	Surgeon ..	Mustered out.
May 9, 1864	Henry C. Tucker....	Asst. Surg.	“ “ “ “

ONE HUNDRED AND SIXTY-SECOND REGIMENT O. N. G.*

May 20, 1864	D. A. Morse.....	Surgeon ..	Mustered out with regiment Sept. 4, 1864.
May 20, 1864	Thos. H. Whitacre..	Asst. Surg.	“ “ “ “
May 20, 1864	D. H. Miller.....	“	“ “ “ “

ONE HUNDRED AND SIXTY-THIRD REGIMENT O. N. G.*

May 13, 1864	Alex. Sutherland...	Surgeon ..	Mustered out with regiment Sept. 10, 1864.
May 13, 1864	James O. Carter....	Asst. Surg.	“ “ “ “
May 13, 1864	David C. McMillen..	“	“ “ “ “

ONE HUNDRED AND SIXTY-FOURTH REGIMENT O. N. G.*

May 11, 1864	Robert W. Hales....	Surgeon ..	Mustered out with regiment Aug. 27, 1864.
May 11, 1864	George S. Yingling..	Asst. Surg.	“ “ “ “
May 11, 1864	John F. Shaffner....	“	“ “ “ “

ONE HUNDRED AND SIXTY-FIFTH REGIMENT O. N. G.*

.....	George Mallory.....	Surgeon ..	Mustered out with regiment Aug. 31, 1864.
.....	Sol. Wolf.....	Asst. Surg.	“ “ “ “

ONE HUNDRED AND SIXTY-SIXTH REGIMENT O. N. G.*

May 15, 1864	Thos. M. Ebright...	Surgeon ..	Mustered out with regiment Sept. 9, 1864.
May 15, 1864	Wm. H. Sykes.....	Asst. Surg.	“ “ “ “
May 27, 1864	Henry C. Newkirk...	“	“ “ “ “

ONE HUNDRED AND SIXTY-SEVENTH REGIMENT O. N. G.*

May 16, 1864	Moses H. Haynes...	Surgeon ..	Mustered out with regiment Sept. 8, 1864.
May 16, 1864	James S. Furguson..	Asst. Surg.	“ “ “ “

ONE HUNDRED AND SIXTY-EIGHTH REGIMENT O. N. G.*

May 19, 1864	B. D. Granger.....	Surgeon ..	Mustered out with regiment Sept. 8, 1864.
.....	Chas. H. Smith.....	Asst. Surg.	“ “ “ “

* One hundred days' regiments.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND SIXTY-NINTH REGIMENT O. N. G.*

Date.	Name.	Date.	Remarks.
May 15, 1864	Peter Beauregard.....	Surgeon..	Mustered out with reg't. Sept. 4, 864
July 6, 1864	O. C. McCarty.....	Asst. Surg.	" " " "
July 17, 1864	Charles Hunt.....	"	" " " "

ONE HUNDRED AND SEVENTIETH REGIMENT O. N. G.*

May 17, 1864	James B. Crawford ...	Surgeon..	Mustered out with reg't. Sept. 10, 864
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ONE HUNDRED AND SEVENTY-FIRST REGIMENT O. N. G.*

May 7, 1864	Frederick C. Applegate	Surgeon..	Mustered out with reg't. Aug. 20, 1864.
May 10, 1864	Benj. F. Pitman	Asst. Surg.	" " " "
May 10, 1864	Albert G. Minor.....	"	" " " "

ONE HUNDRED AND SEVENTY-SECOND REGIMENT O. N. G.*

May 11, 1864	John Morgan.....	Surgeon..	Mustered out with reg't. Sept. 3, 1864.
June 8, 1864	George Wyman.....	Asst. Surg.	" " " "
June 17, 1864	Ed. B. Morher	"	" " " "

ONE HUNDRED AND SEVENTY-THIRD REGIMENT O. V. I.

Sept. 19, 1864	J. C. Marr.....	Surgeon..	Mustered out with reg't. June 26, 1865.
" "	Joseph Morris.....	Asst. Surg.	" " " "
" "	George Wyman.....	"	" " " "

ONE HUNDRED AND SEVENTY-FOURTH REGIMENT O. V. I.

Sept. 19, 1864	F. W. Morrison	Surgeon..	Mustered out with reg't. June 28, 1865.
" 15, 1864	Martin Doty.....	Asst. Surg.	Died in service December 10, 1864
" 19, 1864	Mitchell Starr	"	Mustered out with reg't. June 28, 1865.
Mar. 7, 1865	Chas. E. Monroe	"	" " " "

ONE HUNDRED AND SEVENTY-FIFTH REGIMENT O. V. I.

Sept. 20, 1864	Rufus A. Dwyer	Surgeon..	Mustered out with reg't. June 27, 1865.
" "	D. B. Granger	Asst. Surg.	" " " "
" "	W. F. Hani	"	Resigned May, 1865.

ONE HUNDRED AND SEVENTY-SIXTH REGIMENT O. V. I.

Sept. 20, 1864	Wm. A. Brown.....	Surgeon..	Mustered out with reg't. June 14, 1865.
" "	Wm. Reed.....	Asst. Surg.	" " " "
" "	J. B. Young.....	"	Declined commission.
Jan. 17, 1865	C. M. Fiser	"	Mustered out with reg't. June 14, 1865.

ONE HUNDRED AND SEVENTY-SEVENTH REGIMENT O. V. I.

Sept. 19, 1864	S. S. Burrowes.....	Surgeon..	Mustered out with reg't. June 24, 1865.
" "	W. A. Bivans	Asst. Surg.	Resigned November 30, 1864.
" "	Richard Edwards.....	"	Mustered out with reg't. June 24, 1865.
April 5, 1865	Harvey N. Rogers.....	"	" " " "

ONE HUNDRED AND SEVENTY-EIGHTH REGIMENT O. V. I.

Sept. 26, 1864	J. Campbell	Surgeon..	Mustered out with reg't. June 29, 1865.
" "	Edwin Booth.....	Asst. Surg.	" " " "
" "	Robert Taylor	"	" " " "

*One hundred days' regiments.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND SEVENTY-NINTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 26, 1864	Wm. H. Wilson	Surgeon ..	Mustered out with reg't. June 17, 1865.
Sept. 27, 1864	M. H. Logue	Asst. Surg.	" " " "
Sept. —, 1864	Wm. E. Patterson	"	Declined commission.
Oct. 3, 1864	F. W. Inman	"	Resigned Feb. 20, 1865.
April 29, 1865	Howard C. LaForce	"	Mustered out with reg't. June 17, 1865.

ONE HUNDRED AND EIGHTIETH REGIMENT O. V. I.

Oct. 20, 1864	Frank E. Powers	Surgeon ..	Mustered out with reg't. July 12, 1865.
Oct. 10, 1864	James N. Bolard	Asst. Surg.	" " " "
Oct. 11, 1864	Calvin D. Case	"	Discharged April 22, 1865.
July —, 1865	Wm. H. Brown	"	Mustered out with reg't. July 12, 1865.

ONE HUNDRED AND EIGHTY-FIRST REGIMENT O. V. I.

Oct. 20, 1864	Solomon Wolff	Surgeon ..	Mustered out with reg't. July 14, 1865.
Oct. 21, 1864	Albert Force	Asst. Surg.	" " " "
" "	Thos. B. Eagle	"	Declined commission.
Nov. 2, 1864	Oliver C. McCartney ..	"	Mustered out with reg't. July 14, 1865.

ONE HUNDRED AND EIGHTY-SECOND REGIMENT O. V. I.

Oct. 10, 1864	Wm. Tripp	Surgeon ..	Declined commission.
Oct. 20, 1864	Milton Valentine	"	Resigned March 18, 1865.
Mar. 31, 1865	George Cassaday	"	Mustered out with reg't. July 7, 1865.
Oct. 20, 1864	Abraham H. Iler	Asst. Surg.	" " " "
Oct. 19, 1864	Peter Willett	"	Resigned March 21, 1865.
April 10, 1865	Thos. J. Thompson	"	Mustered out with reg't. July 7, 1865.

ONE HUNDRED AND EIGHTY-THIRD REGIMENT O. V. I.

Nov. 12, 1864	Cyrus Hosack	Surgeon ..	Mustered out with reg't. July 17, 1865.
Nov. 11, 1864	F. C. Plunkett	Asst. Surg.	" " " "
Nov. 12, 1864	Edward F. Baker	"	" " " "

ONE HUNDRED AND EIGHTY-FOURTH REGIMENT O. V. I.

Feb. 18, 1865	T. G. Myer	Surgeon ..	Mustered out with reg't. Sept. 20, 1865.
" "	Robt. A. Richardson ..	Asst. Surg.	" " " "
Feb. 28, 1865	H. H. Shaw	"	" " " "
April 25, 1865	E. W. Price	"	Mustered out as supernumerary.

ONE HUNDRED AND EIGHTY-FIFTH REGIMENT O. V. I.

Mar. 3, 1865	E. Dillon Bowers	Surgeon ..	Mustered out with reg't. Oct. 3, 1865.
Mar. 17, 1865	Douglass Bell	Asst. Surg.	Never mustered.
Feb. 25, 1865	Foster Bodel	"	Mustered out with reg't. Oct. 3, 1865.
June 17, 1865	Jas. H. Welsh	"	" " " "

ONE HUNDRED AND EIGHTY-SIXTH REGIMENT O. V. I.

Mar. 1, 1865	W. H. Matchett	Surgeon ..	Mustered out with reg't. Sept. 18, 1865.
" "	Wm. Hargreaves	Asst. Surg.	" " " "
Mar. 23, 1865	T. M. Coleman	"	" " " "

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND EIGHTY-SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
April 17, 1865	Henry M. Shaffer ...	Surgeon ..	Resigned June, 1865.
June 1865	Theo. H. Patterson ..	"	
Mar. 8, 1865	Henry M. Shaffer ...	Asst. Surg.	Promoted Surgeon.
April 3, 1865	Theo. H. Patterson ..	"	"
May 2, 1865	Wm. B. Shaffer	"	
July 17, 1865	W. H. Carpenter.....	"	

ONE HUNDRED AND EIGHTY-EIGHTH REGIMENT O. V. I.

Mar. 7, 1865	Aug. W. Munson	Surgeon ..	Mustered out with regiment, Sept. 21, '65.
Mar. 4, 1865	John M. Wheaton	Asst. Surg.	" " "
Mar. 14, 1865	Hannibal Landon...	"	" " "

ONE HUNDRED AND EIGHTY-NINTH REGIMENT O. V. I.

Mar. 9, 1865	Sidney E. Gordon...	Surgeon ..	Mustered out with regiment, Sept. 28, '65.
Mar. 10, 1865	L. S. B. Otwell.....	Asst. Surg.	" " "
Mar. 10, 1865	Curtis Otwell	"	" " "

ONE HUNDRED AND NINETY-FIRST REGIMENT O. V. I.

March 6, 1865	Jas. W. Warfield....	Surgeon ..	Mustered out with regiment, Aug. 27, '65.
" " "	B. F. McKinnon	Asst. Surg.	" " "
" " "	George Willis	"	" " "

ONE HUNDRED AND NINETY-SECOND REGIMENT O. V. I.

Mar. 15, 1865	Wm. S. Parker	Surgeon ..	Mustered out with regiment, Sept. 1, '65.
" 9, 1865	Calvin B. Holcomb ..	Asst. Surg.	" " "
" 15, 1865	H. B. Martin	"	" " "

ONE HUNDRED AND NINETY-THIRD REGIMENT O. V. I.

Mar. 18, 1865	Wm. S. Newton.....	Surgeon ..	Mustered out with regiment, Aug. 4, '65.
" 14, 1865	J. P. Waste.....	Asst. Surg.	" " "
" 22, 1865	Ambrose Brown	"	" " "

ONE HUNDRED AND NINETY-FOURTH REGIMENT O. V. I.

Mar. 14, 1865	Jos. E. Barrett.....	Surgeon ..	Resigned June, 1865.
June 1865	Thos. J. Livers	"	Mustered out with regiment, Oct. 24, '65.
Mar. 14, 1865	Jacob T. Franks	Asst. Surg.	Mustered out from date of muster in.
Mar. 20, 1865	Thos. J. Livers	"	Promoted Surgeon.
July 15, 1865	B. F. Graham.....	"	Dismissed by order of Sec. of War, Oct. '65.

ONE HUNDRED AND NINETY-FIFTH REGIMENT O. V. I.

Mar. 19, 1865	John Dickerson.....	Surgeon ..	
" 16, 1865	D. B. Elson.....	Asst. Surg.	
" 31, 1865	Hugh S. Strain	"	

ONE HUNDRED AND NINETY-SIXTH REGIMENT O. V. I.

April.... 1865	H. B. Noble.....	Surgeon ..	Mustered out with regiment, Sept. 11, '65.
Mar. 21, 1865	J. W. Driscoll	Asst. Surg.	" " "
" 22, 1865	C. J. Shields.....	"	" " "

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND NINETY-SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
April 1, 1865	W. G. Bryant.....	Surgeon ..	Mustered out with regiment, July 31, '65.
Mar. 30, 1865	Geo. W. Pease.....	Asst Surg.	" " "
" 31, 1865	Amos Laurence.....	"	" " "

FIRST REGIMENT OHIO CAVALRY.

Aug. 19, 1862	Rudolph Wirth.....	Surgeon ..	Resigned Nov. 20, 1863.
Dec. 19, 1863	Wilson V. Cowan...	"	" July, 1864.
Dec. 9, 1864	John Cannan.....	"	Mustered out with regiment, Sept. 13, '65.
Oct. 10, 1861	John Cannan.....	Asst. Surg.	Promoted Surgeon.
Aug. 20, 1862	John B. McDill.....	"	Mustered out.

SECOND REGIMENT OHIO CAVALRY.

Aug. 27, 1861	Alfred Taylor	Surgeon ..	Transferred to 89th O. V. I.
April 21, 1863	Joseph T. Smith....	"	Resigned March 28, 1865.
April 17, 1865	W. H. McReynolds..	"	" June 8, 1865.
June 14, 1865	N. B. Brisbine	"	Mustered out with regiment, Sept. 11, '65.
Aug. 28, 1861	Jos. T. Smith	Asst. Surg.	Promoted Surgeon.
June 9, 1863	H. B. Noble.....	"	" 196th O. V. I.
Oct. 22, 1862	H. McReynolds	"	"
May 18, 1865	Mathias Cooke	"	Mustered out with regiment, Sept. 11, '65.

THIRD REGIMENT OHIO CAVALRY.

Oct. 28, 1861	M. C. Cuykendall...	Surgeon ..	Resigned, 1864.
Dec. 1, 1864	W. B. Boyd.....	"	Mustered out with regiment, Aug. 4, '65.
Nov. 4, 1861	S. F. Selby.....	Asst. Surg.	Resigned Nov. 5, 1863.
Aug. 19, 1862	John K. Moore.....	"	Mustered out Dec. 8, 1862.
Jan. 5, 1863	John G. Bigham.....	"	Declined commission.
Mar. 30, 1864	W. B. Boyd.....	"	Promoted Surgeon.
Mar. 31, 1864	W. W. Bickett.....	"	Mustered out with regiment, Aug. 4, '65.

FOURTH REGIMENT O. V. CAVALRY.

Sept. 5, 1861	Lucien A. James....	Surgeon ..	Resigned September 5, 1864.
Oct. 24, 1864	Orestes G. Field	"	Mustered out with regiment, July 15, '65.
Sept. 5, 1861	Thomas McMillen ..	Asst. Surg.	Resigned July 8, 1862.
July 8, 1862	J. R. Weist.....	"	" November 6, 1863.
Aug. 19, 1862	H. B. Noble.....	"	Mustered out.
Aug. 1, 1863	H. H. Ford.....	"	Declined commission.
March 8, 1864	Orestes G. Field	"	Promoted Surgeon.
Nov. 26, 1864	Cyrus P. H. Biggs ..	"	Mustered out with regiment, July 15, '65.

FIFTH REGIMENT O. V. CAVALRY.

Aug. 27, 1861	Chas. Thornton.....	Surgeon ..	Mustered out August 31, 1864.
Oct. 20, 1864	D. V. Rannels	"	Resigned July, 1865.
Aug. 1865	Wm. McMillen.....	"	Mustered out with regiment, Oct. 30, '65.
Sept. 11, 1861	George Sprague	Asst. Surg.	Resigned August, 1864.
Aug. 19, 1862	D. V. Rannels	"	Promoted Surgeon.
Jan. 18, 1865	A. J. Shohoney	"	Mustered out with regiment, Oct. 30, '65.

Roster of Surgeons and Assistant Surgeons—Continued.

SIXTH REGIMENT O. V. C.

Date.	Name.	Rank.	Remarks.
Oct. 24, 1861	W. B. Resner	Surgeon ..	Mustered out at exp'n of term, Nov. 9, '64.
Dec. 5, 1864	A. D. Rockwell	"	Mustered out with regiment Aug. 7, 1865.
Nov. 30, 1861	S. C. Mam	Ass't Surg.	Resigned September 15, 1862.
Sept. 15, 1862	Z. Northway	"	Died of disease September 27, 1864.
May 26, 1863	A. P. Knowlton	"	Resigned December 18, 1863.
Jan. 19, 1864	Jos. Hebble	"	Never mustered.
April 7, 1864	A. D. Rockwell	"	Promoted Surgeon.
Feb. 8, 1865	Asa S. Ashton	"	Declined commission.
April —, 1865	Cuno Rebele	"	Mustered out with regiment Aug. 7, 1865.

SEVENTH REGIMENT O. V. C.

Oct. 9, 1862	Isaac Train	Surgeon ..	Mustered out with regiment July 4, 1865.
Nov. 6, 1862	R. H. Tullus	Ass't Surg.	Died September 20, 1864, at Marietta, Ga.
June 12, 1863	P. G. Barrett	"	Transferred Surgeon U. S. C. T.
Jan. 4, 1865	John Kraps	"	Mustered out with regiment July 4, 1865.

EIGHTH REGIMENT O. V. C.

Oct. 22, 1862	W. B. Davis	Surgeon ..	Resigned.
Nov. 1, 1864	M. J. Bowland	"	Mustered out with regiment July 30, 1865.
Feb. 10, 1865	R. W. Richardson	Ass't Surg.	Declined commission.
Mar. 11, 1863	B. F. Davis	"	Mustered out with regiment July 30, 1865.
May 22, 1865	Lewis H. Hazeltine	"	" " " "

NINTH REGIMENT O. V. C.

Sept. 19, 1862	C. M. Finch	Surgeon ..	Mustered out with regiment July 20, 1865.
Mar. 26, 1863	Wm. McMillen	Ass't Surg.	" " "
Oct. 5, 1863	Jas. C. Thorpe	"	Dismissed April 19, 1864.
April 23, 1864	Charles H. Pinney ..	"	Mustered out with regiment July 20, 1865.

TENTH REGIMENT O. V. C.

Oct. 22, 1862	Jas. W. Thompson ..	Surgeon ..	Died November 25, 1864.
Dec. 5, 1864	Michael Hawes	"	Mustered out with regiment July 24, 1865.
Feb. 14, 1863	M. Valentine	Ass't Surg.	Resigned October 8, 1863.
Feb. 1, 1863	W. G. Hall	"	" September 12, 1863.
Oct. 28, 1863	Michael Hawes	"	Promoted Surgeon.
Mar. 10, 1864	Jas. F. Gardner	"	Resigned January 18, 1865.

ELEVENTH REGIMENT O. V. C.

July 20, 1863	George C. Underhill ..	Surgeon ..	Mustered out April 1, 1865.
July 20, 1862	John H. Finefrock ..	Ass't Surg.	" " "
July 20, 1863	Alfred P. Zeigler	"	" " "
Oct. 5, 1865	J. H. Finefrock	"	

Roster of Surgeons and Assistant Surgeons—Continued.

TWELFTH REGIMENT O. V. C.

Date.	Name.	Rank.	Remarks.
Oct. 15, 1863	George W. Brooke ..	Surgeon ..	Resigned July, 1865.
Aug. 15, 1865	W. K. Hughes	"	
Nov. 6, 1863	W. K. Hughes	Ass't Surg.	Promoted Surgeon.
Nov. 6, 1863	A. H. Hunt.....	"	Resigned to enter Regular Army.
Sept. 20, 1865	George W. Pease.....	"	

THIRTEENTH REGIMENT O. V. C.

— — — —	—, 1864	William H. Park ...	Surgeon ..	Declined commission.
Oct. 19, 1864		N. S. Richardson....	"	Mustered out with regiment Aug. 10, 1865.
May —, 1864		R. C. Downey	Ass't Surg	Resigned April, 1865.
May 2, 1865		W. J. Wilson	"	Mustered out with regiment Aug. 10, 1865.
June —, 1865		H. W. Carpenter.....	"	Never mustered.

FIRST REGIMENT OHIO HEAVY ARTILLERY.

Sept. 8, 1862	J. L. Firestone.....	Surgeon ..	Mustered out with regiment July 25, 1865.
Aug. 12, 1863	E. L. Hard	Ass't Surg.	Resigned August 23, 1864.
Nov. 10, 1863	N. B. Lafferty	"	" June 9, 1865.
Jan. 4, 1865	Henry C. Beard.....	"	Mustered out with regiment July 25, 1865.
Feb. 28, 1865	George A. E. Cary ..	"	" " "

SECOND REGIMENT OHIO HEAVY ARTILLERY.

Aug. 11, 1863	Strickland Albright..	Surgeon ..	Mustered out with regiment Aug. 25, 1865.
Aug. 26, 1863	Frank E. Powers....	Ass't Surg.	Promoted Surgeon 180th O. V. I.
Oct. 4, 1864	E. V. Kendig	"	Mustered out with regiment Aug. 25, 1865.
Nov. 14, 1864	John Morgan.....	"	" " "
Aug. 26, 1863	R. A. Dwyer.....	"	Promoted Surgeon 178th O. V. I.

I.

Names of Physicians who have Volunteered their Services in Caring for Sick and Wounded during the War.

Name.	Residence.
Lyman Little.....	Cleveland.
J. S. Drake.....	do
Charles Cochrane.....	Toledo.
L. A. Brewer.....	do
Samuel S. Thorne.....	do
Julian Harman.....	Warren.
Warren Iddings.....	do
S. J. Mills.....	Hancock county.
P. W. Crum.....	Stark county.
J. D. O'Connor.....	Member Legislature.
B. F. Coates.....	do do
E. B. Fee.....	do do
T. A. Reamy.....	do do
Dr. McConnell.....	New Concord.
Wm. H. Holden.....	Member Legislature.
A. V. Patterson.....	Galion.
H. M. Duff.....	do
Alexander Steele.....	Oberlin.
George W. Brooke.....	Ellsworth.
J. M. Todd.....	New Lisbon.
Dr. Donahoe.....	Sandusky.
Dr. Bronson.....	do
Thomas C. Farnald.....	do
Wm. L. McMillen.....	Columbus.
S. M. Smith.....	do
J. W. Thompson.....	do
F. H. Jennings.....	Sonora.
J. M. McCullough.....	West Jefferson.
P. M. Wagenhals.....	Lancaster.
S. A. Moore.....	Circleville.
H. B. Pancost.....	Frederickstown.
Bryant Potter.....	do
J. M. Snodgrass.....	Ostrander.
J. N. Hamilton.....	Unionville Centre.
J. W. Long.....	Bryan.
Z. F. Guinn.....	Hope.
C. Welsh.....	Delaware.
E. Cars.....	Dresden.
B. F. Lement.....	do
W. F. Cowan.....	Sidney.
Thomas Daniel.....	Worthington.
George R. Morton.....	Sandusky.
Joseph Truesdale.....	Poland.
J. T. Beebe.....	Mt. Gilead.
S. D. Steer.....	Painesville.
Alex. Lewis.....	Malta.
Wm. A. Brown.....	McConnellsville.
M. D. Wilson.....	Bell Centre.
J. S. Crawford.....	Woodstock.
Wm. Mills.....	Cadiz.
H. L. Look.....	Steubenville.
E. Mygatt.....	Poland.
A. Abernethy.....	Lexington.

Names of Physicians who have volunteered their services—Continued.

Name.	Residence.
J. J. Hueston.....	Jamestown.
Aaron Wright.....	Springboro'.
Isaac H. Kentz.....	New Philadelphia.
John W. Bugh.....	Pataskala.
Jonathan Miesse.....	Chillicothe.
Thomas Scott.....	do
Wm. Waddle.....	do
G. W. Denig.....	do
A. W. Parkerton.....	Piqua.
J. M. Shackelford.....	Portsmouth.
James C. Thorpe.....	Sidney.
H. S. Conklin.....	do
J. F. Spain.....	Mechanicsburg.
D. B. Wren.....	Urbana.
L. J. Moon.....	Columbus.
Dr. Smiley.....	Piqua.
B. B. Leonard.....	West Liberty.
J. B. Finley.....	Celina.
R. L. Sweeney.....	Marion.
H. W. Owen.....	Mt. Vernon.
A. E. Jenner.....	Crestline.
Wm. B. McGavran.....	Westerville.
Dr. Culbertson.....	Zanesville.
John A. Bingham.....	Millersburg.
Wm. A. McCully.....	Jacksonsburg.
Wm. F. McDonald.....	Wooster.
H. Wilkerson.....	Fort Ancient.
D. Logan.....	Cincinnati.
David Little.....	Logan.
J. J. Harty.....	Belleone.
J. T. Joseph.....	Cummins ville.
H. W. Carpenter.....	Lancaster.
Wm. H. Gardner.....	Oneida Mills.
Henry Besse.....	Porter.
Andrew P. Meng.....	Paulding.
J. H. Anderson.....	Middlebourne.
J. K. Lanseland.....	Putnam.
J. R. Kemp.....	Bryan.
D. Caulkins.....	Defiance.
James Gardner.....	Navarre.
Thomas Hurd.....	Columbus.
D. A. Arter.....	Carrollton.
E. Dillon Bowers.....	Columbus.
R. Gaurdem.....	Pioneer.
O. E. Davis.....	Lancaster.
J. Strong.....	Elyria.
J. C. McBeth.....	Galion.
S. C. Chase.....	McArthur.
Hiram Echman.....	Ulrichsville.
F. W. McCauley.....	do
W. B. Sisson.....	Pine Grove.
A. H. Hamilton.....	St. Clairsville.
Henry C. Pearce.....	Texas.
E. W. Howard.....	Akron.
Dr. McMillen.....	Sunbury.
George C. Underhill.....	Lagrange.
L. Wilson.....	Greenfield.
G. W. Robey.....	Bainbridge.
C. A. Evans.....	Delphos.
Wm. Depuy.....	Van Wert.
C. C. Marshall.....	Delphos.
W. Tripp.....	Carrollton.

Names of Physicians who have volunteered their services—Continued.

Name.	Residence.
Wm. Bricker.....	Shelby.
L. C. Hendren.....	Lafayette.
A. Dunlap.....	Springfield.
Edward Neishong.....	Canton.
Joseph Osborne.....	Delphos.
A. Harlow.....	Shagrin Falls.
C. H. P. Hart.....	Bellebrook.
Wm. St. Clair.....	Fremont.
Samuel Lewis.....	Dunbarton.
David Marquis.....	West Point.
O. G. Seldon.....	Shanesville.
George W. Hill.....	Ashland.
M. Effinger.....	Lancaster.
Roeliff Bevier.....	Plymouth.
James B. Owens.....	Monroe.
K. G. Thomas.....	Alliance.
J. H. Tressett.....	Malvern.
W. H. Wells.....	Delphos.
P. M. McFarland.....	Newark.
Thomas B. Johnson.....	Xenia.
W. A. Disney.....	Mt. Vernon.
A. R. Terrell.....	do
W. H. Most.....	do
E. A. Finn.....	Farow River.
Dr. Percy.....	Fowler's Mills.
S. S. Gray.....	Piqua.
J. C. Winters.....	Ripley.
E. R. Bell.....	do
Thomas J. Peirce.....	Mechanicsburg.
J. K. Davis.....	New Holland.
J. F. Wilson.....	do
J. M. Abraham.....	do
P. H. Clermore.....	Willshire.
John Earhart.....	Athens.
J. M. Crether.....	New Philadelphia.
F. M. Black.....	Darbyville.
J. E. Fennery.....	Clyde.
Stanton Judkins.....	Lyme, Ind.
W. A. Carmichael.....	Loveland.
H. Reeves.....	New Holland.
Thomas Jones.....	Mechanicsburg.
Hiram Cox.....	Mt. Pleasant.
J. W. Gowdy.....	Newcomerstown.
W. R. Eider.....	Youngstown.
Wilson R. Hurst.....	Chillicothe.
G. S. Metzgar.....	Columbiana.
D. C. McMillen.....	Shelby.
Jonas Colby.....	Defiance.
W. H. Matchett.....	Greenville.
Mulford Skinner.....	Fairfield.
J. S. Carter.....	Urbana.
P. W. Sampsell.....	Elyria.
W. P. Jones.....	Centreville.
John R. Walker.....	Wilmington.
Franklin Dennis.....	Mt. Carmel.

K.

Names of those who volunteered as Nurses during 1862, 1863 and 1864.

Name.	Residence.
Lewis Woodward	Columbus.
Mathias Koogle	do
George B. Senter	Cleveland.
J. W. Fitch	do
Abram Sells	Columbus.
George Latimore	do
Abel Gray	do
Joseph Goodown	do
Seraphina Myers	Canton.
Cornelius Aultman	do
Leonard Burton	Warren.
John E. Carey	do
Alex. McKinney	New Concord.
Wm. E. Patterson	New Lisbon.
E. B. Lee	Frederickstown.
John McCullough	Ostrander.
B. H. Fisher	Bryan.
D. M. Crall	do
Robert Cauldwell	do
J. H. Fearn	Groveport.
George Evans	do
S. R. Taylor	Worthington.
S. A. Moore	Circleville.
H. Colby	Mansfield.
Addison Miller	North Benton.
E. G. Church	Mecca.
A. J. Sanders	Columbus.
William F. Payne	Alexandria.
James M. Barn	Delphos.
Jonas Woodward	Milton.
J. M. Judson	New London.
F. W. Bingham	Cleveland.
J. F. Kartham	Massillon.
J. P. Santmyer	Cincinnati.
Winthrop Pelton	Gustavus.
J. N. Harrington	South Bloomfield.
O. P. Price	Gahanna.
Mrs. Mary Steele	Degraff.
Miss Lavina Cox	do
Miss Julia Corwin	do
George Lytle	Antrim.
J. A. Stewart	do
James McCormie	do
M. C. McMakin	Hamilton.
Abraham Miller	do
David L. Bennett	do
J. P. Gorsuch	do
Henry S. Stearns	do
George Kinsman	do
E. G. Putnam	do
John G. Mears	do
E. Williams	do
William Plumer	Steubenville.
W. W. Locke	Covington.
Rev. E. P. Goodwin	Columbus.
Mr. Bickett	do
S. B. Lott	Greenville.
F. J. Peirce	Mechanicsburg.
W. W. Steedman	6th Cavalry.
Richard Renyolds	Delaware.
A. M. Huff	do

Names of those who volunteered as Nurses—Continued.

Name.	Residence.
Christian Albright.....	Delaware.
Rev. J. L. Grover.....	Columbus.
William R. Crozier.....	Piqua.
S. Genslinger.....	do
Rev. Chapman.....	do
W. F. Humphreville.....	do
A. R. Howlet.....	Bucyrus.
E. F. Weekly.....	New Carlisle.
Joseph Warwick.....	Warren.
James Morrison.....	Piqua.
R. D. Burrill.....	Sheffield.
John L. Jones.....	Columbus.
T. M. Peacock.....	Marysville.
J. G. Alexander.....	do
C. P. Cavis.....	do
Isaac Paist.....	Mechanicsburg.
J. E. Vogleson.....	Columbiana.
John Limbrunor.....	Columbus.
Frank J. Hardy.....	Piqua.
H. M. Smith.....	Croton.
George W. Miller.....	Covington.
William Shuman.....	do
A. K. Shellabarger.....	do
D. F. Martin.....	do
Leonidas Foleckemter.....	do
H. S. Snodgrass.....	Ostranda.
J. Y. Stephens.....	Delphos.
C. C. Marshall.....	do
Henry Bastline.....	Shelby.
C. S. Pyle.....	Mt. Vernon.
J. C. Campbell.....	Arcadia.
L. F. Muzzy.....	New Lexington.
Melvin Johnson.....	Sidney.
Mr. Armstrong.....	Mt. Vernon.
C. M. Phelps.....	do
Col. James Collier.....	Steubenville.
Michael Hiestand.....	Carroll.
Rev. S. Goodshall.....	Hubbard.
John Stockly.....	Cleveland.
Blanche Arden.....	do
E. W. Levings.....	Niles.
J. R. Patterson.....	Salem.
Miss Sarah C. Bronson.....	Fostoria.
Dudley E. Bond.....	Cleveland.
H. P. Noble.....	Westerville.
H. H. Budd.....	do
J. W. Haynie.....	do
John Smith.....	Westerville.
Miss Helena A. Ricks.....	Massillon.
Joseph Trump.....	Goshen.

L.

List of State Assistant Surgeons, as authorized by Act of Legislature of April 2, 1862.

Name.	Date of service.	Am't paid.
J. L. Morris	May 3 to May 31, 1862.....	\$93 25
S. Hudson	June 2 to July 11, "	133 33
A. T. Markle.....	April 9 to June 15, "	235 95
J. P. Alcorn	April 3 to July 4, "	306 66
Jas. W. Thompson.....	June 5 to June 10, "	16 67
Douglass Luce.....	June 5 to July 5, "	100 00
A. L. Williams.....	June 5 to July 4, "	96 66
John Dickenson	June 5 to July 5, "	100 00
N. F. Graham	May 13 to June 13, "	100 00
D. E. McMillen	May 13 to June 13, "	100 00
Wm. A. Brown	May 17 to June 17, "	100 00
G. P. Hackenberg.....	May 13 to July 4, "	170 00
Alex. McBride	May 13 to June 20, "	120 00
N. F. Graham.....	June 13 to July 13, "	100 00
Joseph E. Barrett.....	May 13 to July 4, "	170 00
W. F. Dean	May 9 to July 13, "	216 66
W. B. Hyatt.....	May 13 to July 22, "	233 33
A. W. Shipley	Apr. 25 to July 2, "	226 67
S. K. Crawford	May 17 to July 9, "	173 33
S. E. Sheldon.....	May 13 to July 4, "	170 00
H. M. Duff.....	May 13 to July 8, "	186 48
D. B. Wren.....	May 12 to July 30, "	160 00
W. F. Tibbats	May 1 to June 30, "	200 00
A. C. McNutt.....	May 14 to July 13, "	200 00
Christian Forster.....	Apr. 3 to May 31, "	193 33
W. H. Jones.....	Apr. 9 to July 9, "	200 00
E. G. Hard	May 13 to June 4, "	70 33
M. J. Bowland.....	June 28 to Aug. 28, "	200 00
A. McMahon.....	July 22 to Aug. 22, "	33 30
F. Swingley	May 13 to July 21, "	230 00
R. A. King.....	.....	33 00
C. M. Finch.....	May 10 to Sept. 10, "	400 00
D. C. Rathburn.....	May 15 to Oct. 1, "	450 00
W. J. Kelly.....	May 13 to Aug. 1, "	256 66
Z. A. Northway.....	May 10 to Oct. 10, "	500 00

M.

List of Surgeons and Assistant Surgeons of United States Volunteer Medical Staff, appointed from Ohio.

1. Charles O'Leary, Brigade Surgeon Aug. 3, 1861; Surgeon July 2, 1862; Brevet Lieut. Col. March 13, 1865, on duty in charge of Doven Hospital, Portsmouth Grove, R.I.
2. John D. Robinson. Brigade Surgeon Aug. 5, 1861; Surgeon July 2, 1862; resigned Feb. 13, 1863.
3. William Clendenin, Brigade Surgeon Aug. 5, 1861; Surgeon July 2, 1862; Bv't Lt. Col. June 1, 1865; mustered out Aug. 5, 1865.
4. George G. Shumard, Brigade Surgeon Aug. 5, 1861; Surgeon July 2, 1862; resigned March 11, 1865.
5. F. Noel Burke, Brigade Surgeon Sept. 6, 1861; Surgeon July 2, 1862; Brevet Lieut. Col. June 1, 1865; mustered out July 27, 1865.
6. D. W. Hartshorne, Brigade Surgeon Sept. 6, 1861; Surgeon July 2, 1862; resigned January 8, 1864.
7. G. C. Blackman, Brigade Surgeon Sept. 18, 1861; Surgeon July 2, 1862; resigned July 30, 1862.
8. W. H. Mussey, Brigade Surgeon Oct. 10, 1861; Med. Inspector U.S.A. June 14, 1862 resigned January 1, 1864.
9. Frederick Seymour, Brigade Surgeon Dec. 24, 1861; Surgeon July 2, 1862; dismissed Feb. 19, 1864.
10. Norman Gay, Brigade Surgeon Dec. 24, 1861; Surgeon July 2, 1862; Brevet Lieut. Col. June 1, 1865; Mustered out July 27, 1865.
11. Rufus H. Johnston, Brigade Surgeon Dec. 24, 1861; Surgeon July 2, 1862; resigned January 24, 1863.
12. William W. Holmes, Brigade Surgeon April 4, 1862; Surgeon July 2, 1862; Discharged October 22, 1863.
13. Wm. W. Nassau, Brigade Surgeon April 4, 1862; Surgeon July 2, 1862; resigned January 23, 1863.
14. Alonzo J. Phelps, Brigade Surgeon April 4, 1862; Surgeon July 2, 1862; Brevet Lieut. Col. March 13, 1865; Medical Director Dep't of Kentucky.
15. Clark McDermont, Brigade Surgeon April 14, 1861; Surgeon July 2, 1862; Brevet Lieut. Col. March 13, 1865, Camp Dennison, Ohio.
16. Elmore Y. Chase, Assistant Surgeon September 11, 1861; Surgeon May 27, 1863, Sioux Falls, Iowa.
17. John M. Robinson, Assistant Surgeon September 11, 1861; Surgeon Feb'y 19, 1863; Mustered out July 31, 1865.
18. Francis Salter, Surgeon November 7, 1862; Brevet Lieut. Col. March 13, 1865, Act'g Medical Director Dep't Alabama.
19. David Stanton, Surgeon Nov. 7, 1862; Brevet Lt. Col. March 13, 1865, Detroit, Mich.
20. How. Culbertson, Surgeon November 7, 1862, Harvey Hospital, Madison, Wis.
21. George R. Weeke, Surgeon Feb. 19, 1863, Little Rock, Ark.
22. Samuel D. Turney, Assistant Surgeon Feb. 19, 1863; Surgeon March 26, 1863, Huntsville, Ala.
23. Edwin Freeman, Assistant Surgeon Nov. 7, 1862; resigned April 15, 1864.
24. R. R. Taylor, Assistant Surgeon Nov. 7, 1862; Surgeon April 13, 1863, Bureau of Freedmen, St. Louis, Mo.
25. M. King Moxley, Assistant Surgeon Feb. 19, 1863, Springfield, Mo.
26. A. C. Schwarzwelder, Assistant Surgeon Feb. 27, 1863; Surgeon July 9, 1863, Bureau of Freedmen, Nashville, Tenn.
27. Enoch Pearce, Assistant Surgeon September 2, 1863; Surgeon September 9, 1863; discharged April 12, 1864.
28. Robert Fletcher, Assistant Surgeon Oct. 13, 1863; Surgeon Nov. 20, 1863; Brevet Col. March 13, 1865, Medical Purveyor, Nashville, Tenn.
29. Jacob Y. Cantwell, Assistant Surgeon Dec. 5, 1863; Surgeon May 24, 1864; Bv't Lt. Col. March 13, 1865, Columbus, Ohio.
30. Thomas B. Hood, Assistant Surgeon Dec. 5, 1863; Surgeon June 30, 1864; Bv't Lieut. Col. March 13, 1865, Bureau of Freedmen.

31. Henry Z. Gill, Assistant Surgeon Dec. 5, 1863; Surgeon June 30, 1864; Bv't Lieut. Col. March 13, 1865; mustered out Aug. 5, 1865.
32. Waldo C. Daniels, Assistant Surgeon September 9, 1863; Surgeon June 30, 1864; Bv't Lieut. Col. March 13, 1865; Mustered out August 5, 1865.
33. G. S. Courtright, Assistant Surgeon August 15, 1863; Bv't Major August 13, 1865; mustered out August 10, 1865.
34. Gerhard Saal, Assistant Surgeon September 9, 1863; Bv't Captain June 1, 1865; Mustered out July 27, 1865.
35. Henry M. Kirke, Assistant Surgeon November 7, 1863; Bv't Major March 13, 1865, Greenville, La.
36. Charles H. Hood, Assistant Surgeon November 7, 1863; Surgeon December 3, 1864; Bv't Lieut. Col. August 9, 1865; mustered out August 10, 1865.
37. John McCurdy, Assistant Surgeon January 8, 1864; resigned February 10, 1865.
38. M. C. Woodworth, Assistant Surgeon January 8, 1864; Surgeon November 25, 1864; resigned March 31, 1865.
39. Samuel Kitchen, Assistant Surgeon January 8, 1864, Noxville, Tenn.
40. J. Sykes Ely, Assistant Surgeon April 20, 1863, Indianapolis, Ind.
41. Abram McMahon, Assistant Surgeon May 18, 1864; Surgeon August 30, 1864, New Orleans, La.
42. John S. McGrew, Assistant Surgeon July 26, 1864; Surgeon January 20, 1865, Lexington, Ky.
43. John H. Frizell, Assistant Surgeon May 13, 1865; mustered out August 5, 1865.
44. Byron Stanton, Assistant Surgeon Feb. 9, 1865; Bv't Major March 13, 1865; mustered out August 22, 1865.
45. Park H. Loring, Assistant Surgeon February 9, 1865; Died February 9, 1865.

N.

LIST OF CONTRACT SURGEONS

From the State of Ohio, employed by Col. C. S. Tripler, U. S. A. Medical Director, Department of Ohio.

Name.	Residence.	Ordered to.
S. M. Richardson	Mastertown.....	Louisville, Ky.
D. M. Murray	Dayton	"
John K. Mock	Greenville	"
J. S. Wilson	Howland	"
J. C. Bowen	Toledo	"
Albert G. Brown	Coshocton	"
Geo. W. Garrison	"	"
C. J. Hagan	Port Washington	"
J. C. McBeth	Gallion	"
W. H. Curran	Cincinnati	"
Samuel L. Kennedy	Mansfield	"
Wm. A. Dixon	Ripley	"
Thomas C. Eakin	Columbus Grove	"
John Welch	Mt. Vernon	"
F. A. Tuttle	Plymouth	"
W. H. Curran	"	"
Wm. A. Flagg	"	"
S. F. Selby	Coleman	"
P. C. Allen	Croton	"
Wm. Fleming	Bellaire	"
Lucius M. Purple	Norwalk	"
Johnson Loffland	Chillicothe	"
Mathias Cook	Columbus	"
Geo. C. Maxon	Shiloh	"
Geo. B. Mills	Dumontsville	"
H. W. Carpenter	Lancaster	"
Wm. R. Berry	"	"
Sol. B. Hiner	William's Course	"
Silas A. Hedges	"	"
Samuel Richards	"	"
H. H. Bishop	"	"
John T. Thrifts	"	"
Silas M. Leeds	"	"
W. C. Gander	"	"
E. W. Savage	"	"
W. P. Foster	Cincinnati	"
S. E. McKinley	"	"
J. W. Reed	"	"
David B. Adams	"	"
Solomon Steward	Mansfield	"
George H. Burrows	"	"
W. W. Fountain	"	"
Phil. C. Cole	"	"
Moses R. Gillmore	"	"
Sanford P. Cutler	"	"
Edward L. Page	"	"
W. W. M. Connel	"	"
Thornton F. White	Kilbourn	"
Wm. A. Johnson	Harrison	"
J. P. White	Cincinnati	"
George W. Ramage	Summersville	"
Wm. Owens	Cincinnati	"
Thomas B. Harcison	Xenia	"
P. H. Loring	Kenton	"
O. P. Potts	Preble Co	"
Solomon Critchfield	Sparta	"
Jacob C. Denise	Dayton	Columbus, O,
Charles E. Boyle	Columbus	"

List of Contract Surgeons.—Continued.

Name.	Residence.	Ordered to.
D. Strickland.....	Howland	Columbus.
J. P. Bing	Pomeroy	"
J. Stoltz	Crestline	Crestline.
A. S. Stevens	Twenty Mile Stand	Camp Dennison.
Thomas B. Eagle	Landonville	Columbus.
James F. Brown	Windham	"
A. P. Esselborn	Cincinnati	"
C. Mackenzie	Cleveland	Cleveland.
J. R. Kelch	Yellow Bnd	Columbus.
A. G. Hart	Cleveland	Cleveland.
J. R. Gast	Circleville	Columbus.
K. Ray	"	"
J. P. Paulding	Piqua	Camp Dennison.
J. H. Williams	Upper Sandusky	Camp Chase.
Roberts Bartholow	Cincinnati	Cincinnati.
C. H. Smith	Columbus	Camp Dennison.
Lucian A. James	Cincinnati	Cincinnati.
A. J. Brochett	Bristol	Columbus.
J. P. Schilling	Stark Co	"
D. Williams	Damascoville	Camp Dennison.
John M. Evans	Newark	Columbus.
J. C. Schenck	Cleveland	Cleveland.
George Cornell	Youngstown	Columbus.
Jacob Laisy	Cleveland	Cleveland.
Charles A. Perden	Greensbury	Columbus.
O. D. Norton	Cincinnati	Cincinnati.
E. B. Stevens	"	"
J. B. Smith	"	"
A. E. Heighway	"	"
W. H. Drury	Columbus	Columbus.
John G. Coates	Cleveland	Camp Dennison.
C. S. Muscrops	Cincinnati	Cincinnati.
John M. Corey	Fremont	Columbus.
J. W. Smith	Cleveland	Cleveland.
Z. F. Guerin	New Albany	Columbus.
L. H. Angell	Cardington	"
G. S. Hutzger	Columbiana	"
S. S. Stanbaugh	Columbus	"
Henry Kuhn	Tiffin	Camp Dennison.
Jacob B. Casebeer	Fredericksburg	"
Isaac Bidell	Mt. Vernon	"
H. P. Hay	East Fairfield	"
Homer C. Shaw	Lancaster	"
J. H. White	Delaware	Camp Delaware.
Starling Loving	Columbus	Columbus.
D. A. Morse	Monroe	"
J. F. Wilson	New Holland	"
Charles Thornton	Cincinnati	Cincinnati.
F. W. Morrison	Delaware	Camp Dennison.
T. J. Pearce	Mechanicsburg	"
Wm. L. Peck	Circleville	"
J. C. Rathburn	Rodney	Gallipolis.
W. H. Phillips	Kenton	"
J. F. Armstrong	Cleveland	Cleveland.
A. T. C. Worthington	"	Lima.
Geo. W. Livesay	Gallipolis	Gallipolis.
L. B. Lathrop	Cleveland	"
D. L. Tidball	Cincinnati	Indianapolis, Ind.
J. M. Hiatt	Oxford	"
Wm. Watt	Kei ton	Madison, Ind.
Orson Britton	Hamilton	"
Geo. W. Garver	"	Indianapolis, Ind.

List of Contract Surgeons.—Continued.

Name.	Residence.	Ordered to.
Jesse Miller.....	North Benton.....	Indianapolis, Ind.
James S. Ferguson	Oxford	Madison, Ind.
H. F. Bosworth	Bellefontaine	"
L. J. Moeller	Columbus.....	Indianapolis, Ind.
Geo. Gamble	Cincinnati	Madison, Ind.
J. S. Gard.....	Columbus.....	"
Moses R. Gilmore	Cincinnati	Louisville, Ky.
E. Julius Fink.....	"	Cairo, Ill.
R. P. Johnson.....	Dearfield	Springfield, Ill.
C. R. Langdon.....	Lancaster	Chicago, Ill.
S. F. Balinger.....	Putnam	Springfield, Ill.
Eben Smith.....	Lock	"
John Resley	Cardington	Chicago, Ill.
H. C. Newkirk	Big Prairie.....	Rock Island, Ill.
Thomas Sullivan.....	Cleveland	Madison, Ind.
David Lewis.....	Belle Vernon.....	Gallipolis, O.
J. A. Mauser.....	Marion	Springfield, Ill.
Jacob Hamp.....	Mt. Vernon	Cairo, Ill.
M. M. Stimmel.....	Kenton	Springfield, Ill.
Simon C. Chase	New Vienna	Mound City, Ill.
B. F. Thrall	Kirkersville	Springfield, Ill.
Wm. B. McGavren	Carrollton	Chicago, Ill.
John H. Goss	New Salem	"
R. S. Stansbury	Clarksville	Mound City, Ill.
Henry K. Hershiser	Columbus.....	Chicago, Ill.
Joshua R. Young.....	Sylvia	Rock Island, Ill.
H. H. Russell	Pomeroy	"
Wm. H. Swander	Union, Montgomery Co.....	Madison, Ill.
R. F. Jacobs.....	Yellow Springs.....	Chicago, Ill. (died.)
Samuel B. Wren	Mechanicsburg.....	"
Wm. P. Evans	Richmond	"
Jesse W. Cook	Selma, Clark Co.....	Jackson, Mich.
Andrew M. Cook.....	"	"
Wm. C. Catlin.....	Cleveland	Madison, Ind.

O.

DEATHS OF MEDICAL OFFICERS DURING THE REBELLION.

Rank.	Name.	Regiment.	Date.	Remarks.
Surgeon....	R. R. McMeans	3d O. V. I....	Oct. 30, 1862	
"	H. H. McAbee	4th "	Sept. 1864	Killed by R. R. accid't.
Ass't Surg..	James Davenport....	9th "	Mar. 29, 1863	Disease con. in service.
Surgeon....	W. W. Holmes.....	12th "	April 28, 1862	Died of consumption.
"	Henry Spellman.....	15th "		" at Evansville, Ind.
Ass't Surg..	John G. Purple.....	20th "	May 13, 1862	Dis. contracted in serv.
"	William Y. Dean.....	25th "	Sept. 17, 1862	" " "
"	G. S. Guthrie	32d "	Feb. 20, 1864	Died at Chattanooga.
"	John A. Soliday.....	32d "	Mar. 26, 1865	" Goldsboro, N.C.
Surgeon....	Francis D. Morris....	35th "	Sept. 23, 1864	" Hamilton, O.
Ass't Surg..	John N. Miner.....	42d "	Dec. 13, 1862	
Surgeon....	W. W. Bridge.....	46th "	Aug. 6, 1864	Died at Marietta, Ga.
Ass't Surg..	Greenleaf C. Norton..	46th "	Aug. 10, 1862	
"	J. K. Lewis.....	48th "	Oct. 11, 1862	
"	A. J. Rosa.....	52d "	Feb. 20, 1864	Died at Lookout Mt.
"	N. H. Fisher.....	56th "	Jan. 25, 1862	
Surgeon....	John P. Haggett.....	57th "	April 30, 1862	
"	William D. Carlin....	57th "	Dec. 26, 1862	Died at Memphis, Tenn.
Ass't Surg..	Bruno Laukriet.....	58th "	Oct. 27, 1862	
"	William S. Moore.....	61st "	July 3, 1863	Killed at Gettysburg.
"	Moses B. Haines.....	69th "		
"	E. W. Steele.....	74th "		
Surgeon....	Charles R. Pierce.....	76th "	Jan. 29, 1863	Died at Vicksburg, Miss
Ass't Surg..	Robert P. Muenschor..	76th "	Oct. 2, 1862	
"	Pardon Cook	77th "	Sept. 23, 1863	
Surgeon....	L. C. Brown	85th "	Nov. 1862	
"	A. Longwell.....	88th "	Mar. 18, 1865	Died at Camp Chase, O.
"	Alfred Taylor.....	89th "	May 23, 1863	Drowned in Ohio river.
"	F. W. Marseilles.....	98th "	May 1, 1864	Died at Chattanooga.
Ass't Surg..	G. W. Sayres.....	102d "	Sept. 1864	" at home.
"	F. M. Andrews.....	103d "	Oct. 9, 1864	" at Atlanta.
Surgeon....	Charles A. Hartman....	107th "	May 9, 1863	Kill'd bat. Fred'ksburg
Ass't Surg..	D. H. Silver.....	111th "	June 27, 1864	D'd at Knoxville, Tenn.
Surgeon....	A. R. Gilkey.....	116th "	June 4, 1863	D'd at Winchester, Va.
"	Thomas J. Shannon....	116th "	Oct. 19, 1864	Killed in battle.
Ass't Surg..	R. H. Tullius.....	7th O. V. C....	Sept. 1864	Died at Ripley, O.
Surgeon....	James W. Thompson..	10th "	Nov. 25, 1864	" at home.
Ass't Surg..	Martin Doty.....	174th O. V. I....	Dec. 10, 1864	[lumbus, O.
"	Samuel Mathers.....	53d "	May 23, 1865	D'd Sem'ary Hosp. Co-
Surgeon....	William F. Brown.....	136th O. N. G....	June, 1864	
Ass't Surg..	Z. Northway.....	6th O. V. C....	Nov. 10, 1864	Died at home.
"	J. H. Biteman.....	19th O. V. I....	Sept. 25, 1865	" in Texas.

RECAPITULATION.

Summary of Medical Officers Appointed, Resigned, Promoted, Dismissed, Deceased and Mustered Out during the Rebellion.

APPOINTED.

Surgeons	287
Assistant Surgeons	694

RESIGNED.

Surgeons	122
Assistant Surgeons	171

PROMOTIONS.

Assistant Surgeons to Surgeons	165
Surgeons and Assistants to Surgeons and Assistants U. S. V.	45

DISMISSED.

Surgeons	2
Assistant Surgeons	12

DECEASED.

Surgeons	18
Assistant Surgeons	24

MUSTERED OUT.

Surgeons	132
Assistant Surgeons]	472

Commissioned but declined to accept	78
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Still in service at date of report—

Surgeons	13
Assistant Surgeons	15

1896

1897

1898

1899

1900

1901

1902

1903

1904

1905

1906

1907

1908

1909

1910

REPORT OF WOUNDED,
THIRD DIVISION, FIFTEENTH ARMY CORPS,
DURING THE

*Campaign and Siege of Vicksburg, Miss., in May, June and July, 1863,
to Surg.-General R. N. BARR, by H. Z. GILL.*

PHILADELPHIA, Penna., Sept. 29, 1865.

Brig.-Gen. R. N. Barr, Surg.-Gen. of Ohio :

GENERAL,—I have the honor to submit the following report of wounded of the 3d Division, 15th Army Corps, during the campaign and siege of Vicksburg, Miss., in the months of May, June and July, 1863, giving the results in each case so far as they could be ascertained during the year following.

The command was composed of three brigades—comprising eleven regiments—and two batteries ; giving a “present strength” of about five thousand men.

The whole number (208) may appear small when compared with the number of deaths from sickness, during the year 1863, in some of the same regiments—the loss being, to my personal knowledge, as high, in some cases,* as one hundred and twenty.

It is a fact not fully realized, that the number of wounded admitted to hospital, is but a small proportion, generally speaking, of the entire number received for treatment into field and post hospital.

There was a smaller number of amputations of the thigh performed than my judgment dictated at the time, and the omission, I have no doubt, resulted in some cases in the loss of lives that might have been saved by a primary operation, especially in the cases of knee-joint injury.

The ground on which our hospital was located was well chosen, being on a ridge—towards the west and south of which there was open country—thus giving opportunity for a breeze of fresh air, with which we were generally favored.

Most of the men were in a fair condition of health when wounded, as you will observe most of the casualties occurred during the assaults (May 19 and 22) at the commencement of the siege, a circumstance very favorable to their recovery.

The “Classified Return,” already furnished you, agrees in the number of wounded, but not in the number of wounds ; for, in cases receiving two injuries, the more serious one only is accounted in the *return*.

I am, General,

Very respectfully,

Your obt. servt.,

H. Z. GILL,

Late Surgeon U. S. Vols..

* 99 O. V. I. lost during 1863. Present, 27 ; absent, 93 ; whole number, 120.

No.	Name.	Rank.	Co.	Regiment.	Injury, and character of.
1	Orlin E. Johns....	Corpl.	....	2d Ia. Bat.	Right inguinal region (severe)
2	J. W. Souders	Priv.	B	47 Ill.	Left foot (severe).....
3	Amos H. Neddleton ..	"	E	1st Ill. Bat.	Right lung penetrated
4	O. D. Prentice	"	E	11th Mo. .	Thoracic parietes (left side)
5	John a Lawrence .	Sergt.	C	"	Right tibia
6	Thomas N. Beerup	Priv.	B	114th Ill..	Commin. fracture of radius and ulna
7	Andrew J. Knapp..	Priv.	F	93d Ind...	Compd. frac. of tib. and fibula—lower half.
8	Levi Carr	"	B	"	Fracture of inferior maxillary (severe).....
9	And. A. Spurbeck..	"	D	47th Ill. .	Right foot and right arm.....
10	James H. Byers ..	"	G	35th Iowa	Fracture of right thigh—lower third
11	Lewis J. Carr	Team.	B	93d Ind...	Compound fracture of right humerus—flesh wound of right leg
12	Charles H. Kellog..	Priv.	D	47th Ill...	Both heels (slight).....
13	Frederick Smith..	"	C	72d Ohio .	Wound of face (severe)
14	William Furrey ..	"	E	"	Flesh wound—right leg
15	Jesse Harbster ...	"	F	"	Flesh wound—left thigh (severe).....
16	Ira Crane	"	F	"	Flesh wound—arm
17	A. H. Rice.....	1st Lt.	F	"	Flesh wound—right thigh (slight)
18	Geo. J. Ulreck	Priv.	H	"	Fracture of right leg (severe).....
19	Henry Frank	Corpl.	K	"	Left orbit (severe). Ball penetrated beneath the base of the skull.....
20	Jefferson C. Perry	Priv.	C	"	Left arm (slight)
21	Zacharias Taylor .	"	A	114th Ill..	Flesh wound—left leg (slight).....
22	Thomas Umphrey	Sergt.	F	"	Fracture of cranial bones
23	James Smith	Priv.	F	"	Penetrating wound of abdomen
24	Ed. Kuchler.....	"	A	"	Flesh wound—left thigh
25	C. H. Atter.....	Corpl.	D	"	Penetrating wound of abdomen
26	Collen Cordell	Priv.	A	"	Flesh wound of thigh.....
27	Thomas Moore.....	"	D	"	Flesh wound—both legs (slight).....
28	Upton Lambkins ..	"	C	93d Ind...	Flesh wound—left arm (slight).....
29	E. Steinberger	"	C	"	Neck (slight)
30	John Crow	Or. Sg.	"	2d Ia. Bat.	Flesh wound—back
31	Levitus Moore	Priv.	I	"	Flesh wound—right arm.....
32	F. C. Cromwell....	"	A	12th Iowa	" " (slight)
33	John W. Pring.....	Corpl.	H	47th Ill...	Fracture of right thigh—middle
34	I. Long	"	H	72d O.V.I.	Scalp wound (slight)
35	John Webb.....	Priv.	A	114th Ill..	Fracture of right arm
36	Allen Hacker.....	Corpl.	E	93d Ind...	Shoulder-joint
37	A. A. Overman.....	Sergt.	A	"	Fracture of left leg (severe).....
38	C. A. Hubbard	Capt.	A	"	Right thoracic parietes
39	John Q. Ashbrook..	Corpl.	D	95th O.V.I.	Scalp wound—left side.....
40	Jacob Black.....	"	D	"	Flesh wound—nape of neck.....
41	Henry Schloman..	Priv.	H	72d O.V.I.	Right hand.....
42	Joshua Underwood	Priv.	C	"	Penetrating wound of abdomen
43	W. H. Perry	"	K	93d Ind...	Fracture of cranial bones
44	Charles D. Dennis	Capt.	E	72d O.V.I.	Flesh wound—right arm (slight)
45	L. R. Crocket.....	Lt. Cl.	"	"	" leg
46	Charles McClarg... .	S. Maj.	"	"	" left thigh
47	Thos. D. Carroll ..	Priv.	A	8th Wis...	Finger—left hand
48	Harrison Sayles ..	Sergt.	E	"	Fracture of left leg
49	J. E. Halley	Priv.	D	"	.....
50	Stephen Estee	Capt.	H	"	Wound of face (severe).....
51	John W. Jefferson	Lt. Cl.	"	"	Finger of left hand (slight).....

CASUALTIES.

Missile or weapon.	Date of injury.	Operation and operator.	Hours after injury.	Anæsthetic.	Remarks.
Shell ...	May 14	Water dressing	.....	.....	Died.
Min. ball	" 14	" [scapula	.....	.....	Recovered for duty.
"	" 14	Ball cut out below right	.....	.....	" "
"	" 14	Water dressing	.....	.....	" "
"	" 14	Simple dressing	.....	.....	"
Can. ball	" 14	.....	.....	.....	Recovered. Left at Jackson, Miss., in hands of Confeds.
Shell ...	" 14	Amputation by Dr. Rice, 72d O. V. I.	One	Chlorf.	Probably died. Left at Jackson, Miss.—not heard from.
"	" 14	.....	.....	.....	Recov'd. Transfd. to V. R. C.
"	" 14	Water dressing	.....	.....	Recovered for duty.
"	" 14	Amputation by Dr. Rice	Two	Chlorf.	Left at Jackson—prob'ly died
"	" 14	.....	.....	.....	Died, May 14.
"	" 14	Water dressing	.....	.....	Recovered.
Minie ...	" 19	"	.....	.....	Recovered, with partial paralysis of right side of face.
"	" 19	"	.....	.....	Recovered for duty.
"	" 19	"	.....	.....	Ball remaining in the wound, Jan. 14, '64—unfit for duty.
"	" 19	"	.....	.....	Recovered for duty.
"	" 19	"	.....	.....	" "
"	" 19	"	.....	.....	Partial recovery.
"	" 19	"	.....	.....	" "
Rifle ball	" 19	"	.....	.....	Recovered for duty.
Minie ...	" 19	"	.....	.....	" "
"	" 19	"	.....	.....	Died, May 23.
"	" 19	.....	.....	.....	Wrote Aug. 8, 1865, to Springfield, Ill., for results—no ans.
"	" 19	Water dressing	.....	.....	Recovered.
"	" 19	"	.....	.....	Died, May 20, at Div. Hosp.
"	" 19	"	.....	.....	Wound probably involved the knee. D. at Memp., June 7.
"	" 19	"	.....	.....	Recovered for duty.
Shell	" 19	"	.....	.....	" "
"	" 19	"	.....	.....	" "
"	" 19	"	.....	.....	" "
Minie ...	" 19	"	.....	.....	" "
Canister .	" 19	"	.....	.....	" "
Minie ...	" 20	Splint dressing	.....	.....	Aug. 1, improv'g. Died in Oct.
"	" 20	Simple dressing	.....	.....	Recovered. Not returned to duty, Jan. 14, 1864.
"	" 20	Disarticulat'n at should'r joint. Dr. Fish, 11 Mo. V.	Five	Chlorf.	Recovered.
"	" 20	Disarticulation. Dr. Fish	Five	"	" Discharged.
Shell	" 20	Amp. Dr. Ford, 93d Ind.	Four	"	" "
"	" 20	Simple dressing	.....	.....	" for duty.
Minie ...	" 20	Water dressing	.....	.....	Recov'd of wd. Died of diarrh.
Shell	" 20	"	.....	.....	Injured by $\frac{1}{2}$ lb lead from base of can. ball Recov. for duty.
Minie ...	" 20	"	.....	.....	Recovered for duty.
"	" 20	Simple dressing	.....	.....	Died, May 23.
"	" 21	.....	.....	.....	Died, north.
Shell	" 21	Water dressing	.....	.....	Recovered for duty.
Minie ...	" 21	"	.....	.....	" "
"	" 21	"	.....	.....	" "
"	" 22	"	.....	.....	" "
"	" 22	Amp. Dr. Murta, 8 Wis.	Five	Chlorf.	Recovered
Shell	" 22	.....	.....	.....	Results unknown.
Minie ...	" 22	Water dressing	.....	.....	Died two or three mos. after.
"	" 22	"	.....	.....	Recovered for duty.

LIST OF

No.	Name.	Rank.	Co.	Regiment.	Injury and character of.
52	Z. Haskill	Priv.	D	8th Wis.	Penetrating wound of abdomen
53	Arthur Coally ...	"	G	do	Finger (slight)
54	Hall. Alson	"	I	do	Right arm
55	John W. Smith ..	"	E	do	Finger
56	Geo. H. Steeling ..	"	F	do	Finger (slight)
57	Geo. E. Leonard ..	"	A	do	Left arm (severe)
58	C. H. Brookings ..	Adj't.	....	11th Mo.V.	Penetrating wound of abdomen—passing through ascending colon
59	W. H. McGuire ..	Priv.	A	do	Flesh wound—left arm (slight)
60	W. H. Couch	"	E	do	Right hand (severe)
61	Thomas D. Bales ..	"	F	do	Flesh wound—left thigh
62	S. E. Warner	Serg't.	K	do	Foot (slight)
63	J. K. Eppley	Priv.	E	do	Opening cavity of chest, left side—fracture of fourth, fifth and sixth ribs
64	J. H. Pridemore ..	"	D	do	Right hip—partial fracture of femur
65	Wm Thompson ..	"	G	do	Flesh wound—right thigh (severe)
66	J. L. Pickrel	"	G	do	Finger (severe)
67	James Snowden ..	"	H	do	Flesh wound near the knee
68	G. W. Gattay	Corp'l.	E	do	Flesh wound of neck
69	L. D. Winchester.	Priv.	F	do	Not ascertained
70	G. H. Deitrich ..	"	I	do	Shoulder joint (severe)
71	Elijah Heeman ..	"	E	do	Fracture of inferior maxillary
72	Lewis H. Gray ...	1st Lt.	H	do	" of both bones right forearm
73	John S. Carrie ...	Serg't.	A	do	" of left arm
74	John H. Irwin ...	Corp'l.	H	do	Left orbit (severe)
75	Wm. K. Akin	Serg't.	G	do	Concussion
76	Dios C. Hagel ...	Priv.	D	do	Scalp (slight)
77	Andrew Eagen ..	"	C	do	"
78	Smith J. Hinman ..	"	C	do	Finger (slight)
79	C. H. Stockenschneider.	"	D	do	Right knee and left foot
80	John Beard	Serg't.	E	do	Hip and shoulder (severe)
81	Harrison Twiddy ..	Priv.	K	do	Finger, left hand (severe)
82	John Morran	"	H	do	Thoracic parietes (severe)
83	C. McMahon	Corp'l.	A	do	Flesh wound, right thigh
84	W. Cleland	Cap't.	F	do	" left thigh
85	Cyrus Vickery ..	Priv.	F	do	Right side of face (severe)
86	W. H. Burgess ..	"	F	do	Flesh wound, right leg (slight)
87	Issac Reeves	"	D	do	Right arm (severe)
88	Sam'l Beaukamp ..	"	I	do	Flesh wound, right thigh
89	Robert Myers	"	A	do	Left knee and both ankles (severe)
90	Joseph Jones	Corp'l.	C	do	Left hand (severe)
91	Eron Williams ..	Priv.	A	do	Penetrating wound of chest (left side)
92	A. N. Gray	Serg't.	G	do	Shoulder and face (severe)
93	Whitney Clark ..	Corp'l.	A	do	Left thigh (severe)
94	A. G. W. Thomas ..	"	E	do	Back and left leg (severe)
95	Miles Bishop	Priv.	G	do	Hip and left arm (severe)
96	Jacob Johnson ..	"	H	do	Flesh wound of neck (slight)
97	Wm. Miles	Corp'l.	G	do	Left foot (severe)
98	F. M. Behymer ..	Priv.	E	do	Flesh wound of back (severe)
99	Samuel Heath	"	A	do	Back (severe)
100	John Wyatt	"	I	do	Wound in abdomen
101	John R. Gould ..	"	A	do	Left shoulder joint (severe)
102	Wm. Anderson ..	Drum.	H	do	Flesh wound, left arm
103	Allen DuBois	Priv.	G	do	Flesh wound, right leg
104	S. B. Donnell	"	H	do	Left elbow joint

CASUALTIES—Con.

Missile or weapon.	Date of injury.	Operation and operator.	Hours after injury.	Anæsthetic.	Remarks.
Minie ...	May 22	Water dressing .....	.....	.....	Died, May 23.
"	" 22	" .....	.....	.....	Recovered for duty.
"	" 22	Amputation. Dr. Fish ..	Five	Chlorf.	Recovered. Discharged.
"	" 22	Amputat'n. Dr. Findley ..	.....	.....	Recovered.
"	" 22	Water dressing .....	.....	.....	Recovered for duty.
Canister.	" 22	.....	.....	.....	Results not known.
Minie ...	" 22	Simple dressing .....	.....	.....	Died, May 28.
"	" 22	Water dressing .....	.....	.....	Recovered for duty.
"	" 22	" .....	.....	.....	Partially recovered.
"	" 22	" .....	.....	.....	Died, July 7, at Memphis.
"	" 22	" .....	.....	.....	Recovered for duty.
"	" 22	Simple dressing .....	.....	.....	Died, May 29.
"	" 22	Several pieces of bone removed during recovery .....	.....	.....	Recovered for duty.
"	" 22	Water dressing .....	.....	.....	" " " "
Min. ball.	" 22	Water dressing .....	.....	.....	Recovered, discharged.
"	" 22	" " .....	.....	.....	" subject for disch'g.
"	" 22	" " .....	.....	.....	for duty.
.....	" 22	.....	.....	.....	Discharged on acc't wounds.
Min. ball.	" 22	Simple dressing .....	.....	.....	" " " "
"	" 22	Water dressing .....	.....	.....	" " injury.
"	" 22	" " and splint .....	.....	.....	Recovered with ankylosis of wrist joint. Resg'd Mar. '64.
Grape ...	" 22	Dis. sh'ldr joint, Dr. Fish ..	Four	Chlorf.	Died June 9, of hemorrhage at Jackson hosp., Memp., Tenn
Min. ball.	" 22	Simple treatment .....	.....	.....	Died June 26, at Memphis.
Shell	" 22	" " .....	.....	.....	Recovered for duty.
"	" 22	Water dressing .....	.....	.....	" "
Min. ball.	" 22	" " .....	.....	.....	" "
"	" 22	" " .....	.....	.....	" "
"	" 22	" " .....	.....	.....	Died at Memphis June 7th.
"	" 22	.....	.....	.....	Recovered. Discharged.
"	" 22	Water dressing .....	.....	.....	Recovered for duty.
"	" 22	Simple treatment .....	.....	.....	Died at Memphis June 15th.
"	" 22	Water dressing .....	.....	.....	Became Capt. of Co. "A."
"	" 22	" " .....	.....	.....	Recovered.
"	" 22	" " .....	.....	.....	Recov'd with loss of eye. Dis.
"	" 22	" " .....	.....	.....	Recovered.
"	" 22	Amputation, Dr. Fish ...	Five	Chlorf.	" Discharged.
"	" 22	Water dressing .....	.....	.....	"
"	" 22	" " .....	.....	.....	Died June 11, at Memphis.
"	" 22	" " .....	.....	.....	Recovered. Discharged.
"	" 22	Simple treatment .....	.....	.....	" "
"	" 22	Water dressing .....	.....	.....	Died June 13, at Memphis.
"	" 22	" " .....	.....	.....	" 12, "
"	" 22	" " .....	.....	.....	" 27, "
"	" 22	" " .....	.....	.....	Died May 26, at Div. hosp.
"	" 22	" " .....	.....	.....	Recovered.
"	" 22	" " .....	.....	.....	Recov'd. Dis. on acc't injury.
"	" 22	.....	.....	.....	Recovered for duty.
"	" 22	Simple treatment .....	.....	.....	Died May 26, at Memphis.
"	" 22	" " .....	.....	.....	Died.
"	" 22	" " .....	.....	.....	Ankylosis. Disch'd May '64.
"	" 22	Water drsssing .....	.....	.....	Recovered.
"	" 22	" " .....	.....	.....	Recovered for duty.
"	" 22	Resection, Dr. Fish	Four.	Chlorf.	United by fibrous matter. Re covered. Discharged.

LIST OF

No.	Name.	Rank.	Company.	Regiment.	Injury, and character of.
105	Ste. A. McPherson	Corp'l.	I	11th Mo. V.	Flesh wound, shoulder (severe)
106	Salmon Maller...	Priv.	H	do	Flesh wound, right leg (severe).....
107	Wm. H. Marriion.	"	D	do	Flesh wound, left leg
108	G. W. Lehr.....	Corp'l.	G	do	Right ankle (severe).....
109	Cyrus J. Spicer ..	Ser'gt.	I	do	Abdominal parietes.....
110	Josiah E. Sullins.	Priv.	I	do	Left thigh and thoracic parietes.....
111	John Floyd.....	"	I	do	Left hip joint and right thigh.....
112	Cyrus Miller.....	Serg't.	G	do	Finger
113	Wm. Ridgley.....	Corp'l.	H	do	Flesh wound, right arm (slight).....
114	W. H. Davidson..	Priv.	B	do	" left shoulder
115	F. N. Sutherland.	"	....	2d Ia. Batt	Four fingers, left hand.....
116	E. Smith.....	"	....	do	Face (severe)
117	Conrad Smith....	"	....	do	Flesh wound, left leg
118	Leonard Roah....	"	B	93d Ind...	Fracture right tibia (severe).....
119	W. J. George	"	B	114th Ill..	Finger (severe)
120	H. C. T. Stephens.	"	C	do	Finger
121	Diego C. Ross....	O. Ser.	B	47th Ill...	Thoracic parietes (severe).....
122	Stephen T. Kelley	Priv.	C	do	Neck (severe).....
123	Joseph Means....	"	B	do	Left hand (severe).....
124	George Ingersol..	"	E	do	Right elbow joint
125	Jas. Cochran	Serg't.	F	do	Left arm (severe).....
126	J. E. McCulloch..	Corp'l.	A	do	Right knee (severe).....
127	Simeon R. Drake.	"	E	do	Right arm (severe)
128	Geo. Frazer.....	Priv.	B	do	Finger left hand.....
129	L. Dumberger....	"	I	do	Right leg (severe)
130	Denis O'Brien ...	"	E	do	Left arm, flesh wound
131	Robt. Garner	"	K	do	Left leg, flesh wound
132	Chris. C. Gilbert.	2d Lt.	C	47th Ill...	Left thigh (severe).....
133	J. W. Davis.....	Priv.	C	do	Thumb.....
134	Wm. T. Birt.....	Corp'l	D	do	Left thigh fractured (severe).....
135	D. J. Ninemire...	Priv.	B	do	Back (severe)
136	William Hawkins	"	F	do	Right thigh (severe).....
137	Frank Russell ...	"	E	do	Penetrating chest.....
138	Ed. Somers.....	"	K	do	Face (slight)
139	J. W. Houtze	Sergt.	D	do	Right leg.....
140	Asa Taylor.....	Priv.	G	do	Right leg (slight).....
141	Henry Robert....	Sergt.	K	do	Left leg.....
142	Daniel Howard..	"	K	do	Penetrating right chest.....
143	Ed. Isabel.....	2d Lt.	E	do	Left foot (severe).....
144	W. E. Rakestraw.	Priv.	E	1st Ill. Bat	Wound in head (severe).....
145	Amos L. Graves..	Corp'l	K	8th Iowa.	Left shoulder (slight).....
146	Thomas Harris...	Priv.	B	do	Hip (slight).....
147	J. C. Maxwell....	1st Lt.	C	do	Left arm (slight).....
148	A. Walker.....	Priv.	A	35th Iowa	Left leg (severe).....
149	Joseph B. Vance.	Sg.Mg.	....	95th O.V.I	Left thigh, bone injured
150	W. McClurg.....	Priv.	G	do	Left hand (severe).....
151	Thos. D. Brown..	"	K	do	Left foot (severe).....
152	Wm. Dalen.....	"	B	14th Wis.	Both legs and finger (severe).....

CASUALTIES—Continued.

Missile or weapon.	Date. of injury.	Operation and operator.	Hours after Injury.	Anaes- thetic.	Remarks.
Min. ball.	May 22	Water dressing .....	.....	.....	Recovered for duty.
Shell	" 22	" " .....	.....	.....	Recovered. Discharged.
Min. ball.	" 22	" " .....	.....	.....	Recovered.
"	" 22	Amputation (secondary) .....	.....	.....	Recovered. Discharged.
"	" 22	Water dressing .....	.....	.....	Died July 5, at Memphis.
"	" 22	" " .....	.....	.....	" 27, "
"	" 22	" " .....	.....	.....	" 5, "
"	" 22	" " .....	.....	.....	Recovered for duty.
"	" 22	" " .....	.....	.....	" "
Canister.	" 22	Amputated on the field..	One	.....	" Discharged.
Musket..	" 22	Simple treatment .....	.....	.....	The ball passed horizontally through the face from left to right, beneath the orbits. Recovered with loss of right eye. Returned to duty.
Min. ball.	" 22	Water dressing .....	.....	.....	Recovered for duty.
"	" 22	" " .....	.....	.....	Died.
"	" 22	Amp'td, Dr. Van Meter..	Two	.....	Recovered for duty.
"	" 22	" Dr. Ford	Two	.....	" "
Shell	" 22	Water dressing .....	.....	.....	" "
Min. ball.	" 22	Water dressing .....	.....	.....	" Discharged.
"	" 22	" " .....	.....	.....	" Trans. to Vet. R. C.
"	" 22	Resection, Dr. H. Z. Gill..	Five.	Chlorf.	" Discharged.
"	" 22	Water dressing .....	.....	.....	" Died on hospital boat.
"	" 22	" " .....	.....	.....	Recovered.
"	" 22	Amputation, Dr. Babb..	18	Chlorf.	Recovered for duty.
"	" 22	Amputation .....	.....	.....	Died.
"	" 22	Water dressing .....	.....	.....	Recovered for duty.
"	" 22	" " .....	.....	.....	"
"	" 22	" " .....	.....	.....	"
Grape ...	May 22	" " .....	.....	.....	Recovered for duty.
Minie ...	" 22	" " .....	.....	.....	" "
Can. Ball.	" 22	Amputation upper third, Dr. H. Z. Gill. Circular operation	Five.	Chlorf.	Recovered of operation; died of chronic diarrhoea at his home in Illinois, Oct., 1863.
Minie ...	" 22	Water dressing .....	.....	.....	Recovered.
"	" 22	" " .....	.....	.....	"
"	" 22	" " .....	.....	.....	Died at Division Hospital.
"	" 22	" " .....	.....	.....	Recovered.
"	" 22	" " .....	.....	.....	Recovered; discharged.
Shell	" 22	" " .....	.....	.....	Recovered for duty.
Minie ...	" 22	Amp'd leg, Dr. Chambers	Five.	Chlorf.	Recovered.
"	" 22	Simple treatment .....	.....	.....	Died June 25, at Memphis.
Grape ...	" 22	Removed the ball, Dr. H. Z. Gill	12	.....	Recovered. Ball entered between the great and second toes; was removed from the sole of the foot, near the heel.
Minie ...	" 22	" " .....	.....	.....	No history.
Shell	" 22	Water dressing .....	.....	.....	Recovered for duty.
"	" 22	" " .....	.....	.....	" "
Minie ...	" 22	" " .....	.....	.....	" "
Shell	" 22	" " .....	.....	.....	Recovered.
Buckshot	" 22	" " .....	.....	.....	Recov'd for duty; com. 1st Lt.
Minie ...	" 22	" " .....	.....	.....	Recovered for duty.
"	" 22	" " .....	.....	.....	" "
"	" 22	Amputated finger .....	.....	.....	No history; he did not belong to the Division.

LIST OF

Number.	Name.	Rank.	Co.	Regt.	Injury and character of.
153	Wm. Shoenburn	Sergt.	E	5th Minn.	Finger (slight).....
154	L Brodenhammer	Lieut.	F	93d Ind...	Shoulder and foot, flesh wound.....
155	Henry Luthers...	Priv.	F	do	Left hand (slight).....
156	J. W. Picket.....	"	I	do	Flesh wound of thigh.....
157	Joseph Thackara.	"	A	95th O. V. I	Right elbow joint.....
158	R. D. J. Clendennin	Priv.	F	93d Ind...	Thoracic parietes.....
159	Milt. Williamson.	1st Lt.	F	72d O. V. I.	Flesh wound, left thigh.....
160	Richard Sparks...	Priv.	E	93d Ind...	Finger.....
161	John Miller.....	"	H	11th Mo...	Flesh wound, both thighs.....
162	Daniel Sands.....	"	A	do	Fracture of middle right thigh.....
163	Eli Wait.....	Corp'l	B	5th Minn.	Wound of face (severe).....
164	Geo. Puterbaugh.	Capt.	E	47th Ill...	Wound in leg, accidentally.....
165	Christian Wolf...	Priv.	D	5th Minn.	Thoracic parietes, left side.....
166	Conrad Neil.....	"	D	do	".....
167	Abe Atterson.....	"	D	do	Right foot.....
168	James Francis...	"	F	72d O. V. I.	Left thoracic parietes, fract. one rib.....
169	John A. Rowen...	"	B	8th Iowa.	Fracture of left tibia.....
170	John Yeaman.....	"	E	1st Ill. Bat	Slight wound, details not given.....
171	Monroe Swift.....	Corpl.	E	do	".....
172	L. J. Jackson.....	Priv.	A	72d O. V. I.	Left elbow joint (severe).....
173	Ed. H. Adams...	"	C	12th Iowa.	Left thigh (knee).....
174	John Ernst.....	"	C	35th Iowa	Wound in head, fracture.....
175	John Gates.....	"	K	93d Ind...	Right leg.....
176	R. T. Grinstead...	"	I	do	Right foot.....
177	Henry S. Marsh...	"	2d	Ia. Batt'y.	Wound in face, at junction of the frontal with nasal bones.....
178	John D. McClure.	Maj.	....	47th Ill...	Wound in chest.....
179	James M. Rhea...	Priv.	I	8th Iowa.	Right knee joint.....
180	James Purkeypile	Sergt.	E	95th O. V. I	Flesh wound, left hand and arm.....
181	Jere. Richmine...	Priv.	E	do	Penetrating cavity of thorax and of abdomen
182	James Ludrick...	"	E	do	Knee joint and both thighs.....
183	Oliver Henry.....	"	E	do	Flesh wound, left hip.....
184	James Taylor...	"	E	do	Flesh wound, left forearm.....
185	Dan'l D. Taylor...	"	E	do	Penetrating abdomen, passing through colon and jejunum.....
186	Jas. R. Dingmore.	"	E	do	Left thoracic parietes.....
187	Jas. R. Coulter...	Sergt.	E	do	Scalp wound, right side; flesh wound, right forearm.....

FROM THE SECOND CROSSING OF BLACK RIVER,

188	Wm. Lawrence...	Priv.	C	114th Ill.	Fracture of left tibia; fibula was fractured by the fall.....
189	Wm. M. Dugan...	1st Lt.	K	35th Iowa	Fracture of right radius.....
190	Michael Bardon...	Sergt.	K	72d O. V. I.	Flesh wound, left arm and forearm.....

CASUALTIES—Continued.

Missile or Weapon.	Date of Injury.	Operation and operator.	Hours after Injury.	Anæsthetic.	Remarks.
Minie ...	May 22	Water dressing.....	.....	.....	Recovered for duty.
"	" 23	" " .....	.....	.....	" "
"	" 23	" " .....	.....	.....	" "
"	" 23	Removed the fractured portions of bone, Dr. Gill	Three	Chlorf.	Recovered; discharged. Sent to Memphis, where the arm was amputated May 30; died June 27.
Shell	" 23	Water dressing.....	.....	.....	Recovered for duty.
Minie	June 23	" " .....	.....	.....	" "
"	" 23	Amputated .....	.....	.....	Recovered; trans. to V. R. C.
"	May 22	Water dressing.....	.....	.....	Died June 26, at Memphis.
"	" 22	Splint dressing.....	.....	.....	Died June 22, at Memphis.
Mus. ball.	June 15	Simple dressing.....	.....	.....	Recovered with loss of sight of right eye. Ball crossed the face and lodged in antrum.
Minie ...	May 19	Water dressing.....	.....	.....	Recovered; wound with navy revolver.
Mus. ball.	June 15	" " .....	.....	.....	Recovered.
"	" 15	" " .....	.....	.....	"
Shell	" 15	" " .....	.....	.....	"
Minie	" 15	" " .....	.....	.....	"
"	May 31	Splint dressing.....	.....	.....	Recovered; discharged. Anchylosis of ankle joint.
"	" 31	.....	.....	.....	Recovered.
"	" 31	.....	.....	.....	Sent to Gen. Hosp. June 12.
"	June 8	Resection of condyles and olecranon process, Dr. Rice	Two.	Chlorf.	Recovered; no osseous union.
Can. ball.	" 8	Amputated lower third, Dr. Huff, 12th Iowa... ..	Three.	Chlorf.	Recovered; bone became exposed, being cut too long.
Minie ...	" 8	Simple treatment.....	.....	.....	Died June 12.
"	" 19	Water dressing.....	.....	.....	Recovered; discharged.
"	" 10	" " .....	.....	.....	Recovered for duty
Mus. ball.	" 10	Ball remov'd through the anterior nares, Dr. Gill .....	.....	.....	" "
Buckshot	" 20	.....	.....	.....	Recovered for duty; ball was supposed not to have entered the pleural cavity.
Minie ...	" 22	Amp'd lower 3d, circular operat'n, Dr. H. Z. Gill	Six.	Chlorf.	Patient was sick at the time of injury. Died July 25.
Buckshot	" 20	Water dressing.....	.....	.....	Recovered for duty.
"	" 20	Simple dressing.....	.....	.....	Died.
"	" 20	Water dressing.....	.....	.....	Died July 5.
"	" 20	" " .....	.....	.....	Recovered for duty.
"	" 20	" " .....	.....	.....	" "
"	" 20	" " .....	.....	.....	Died June 22.
"	" 20	" " .....	.....	.....	Recovered for duty.
"	" 20	" " .....	.....	.....	" "

UNTIL THE EVACUATION OF JACKSON BY THE ENEMY.

Minie ...	July 6	Applied bark splints.....	.....	.....	Recovered; discharged.
"	" 11	Water dressing.....	.....	.....	Recovered for duty.
Round bl.	" 13	" " .....	.....	.....	" "

LIST OF

Number.	Name.	Rank.	Co.	Regiment.	Injury and character of.
191	Jno. H. Wedeking	Priv.	A	114th Ill.	Fracture of right femer, upper third. The ball penetrated the external aspect of the limb below the trochanter major, and was split in two. The femeral vein was not ruptured
192	Robert King.....	Priv.	K	5th Ill. Cav	Flesh wound, left thigh.....
193	D. H. Trowbridge	Corp'l	L	do	" right leg
194	John D. Goble...	Priv.	C	8th Iowa.	" left forearm
195	And. D. Johnson.	Corp'l	C	do	" right ankle.....
196	John W. Wood ..	Priv.	F	114th Ill..	" of left arm and breast.....
197	Noah H. Betts...	Corp'l	E	93d Ind...	" right forearm.....
198	Jacob F. Beyer..	"	C	8th Iowa.	Right hand.....
199	Jerome Spilman.	Capt.	F	93d Ind...	Partial fracture of radius
200	Geo. T. Unland..	Priv.	A	114th Ill..	Flesh wound, left arm.....
201	John Davis.....	"	D	do	" of gleteus and calf of right leg.
202	Conrad Schmell..	"	A	do	Fracture of left oscalcis.....
203	Thos. H. Morris..	Sergt	H	8th Iowa.	" scapula and eighth rib.....
204	George Neohfer..	Priv.	D	72d O. V. I.	Flesh wound, left forearm.....
205	Wm. Wolverton.	Sergt.	A	do	" hypogastrium
206	John B. King....	Priv.	C	do	" right gluteus.....
207	James Martin....	"	K	8th Iowa.	" right thigh.....
208	Wiliston Utter...	"	K	do	Right knee joint.....

CASUALTIES—Continued.

Missile or Weapon.	Date.	Operation and operator.	Hours after Injury.	Anæ- sthetic.	Remarks.
Minie ...	July 16	Amputated half an inch from trochanter minor, Dr. H. Z. Gill. (Skey's operation.....)	Five.	Chlorf.	Recovered; the patient was carried 30 miles on a litter, starting on the 20th.
Minie ...	" 8	Water dressing.....	.....	.....	Recovered for duty.
" "	" 8	" ".....	.....	.....	" "
Round bl	" 16	" ".....	.....	.....	" "
Minie ...	" 16	" ".....	.....	.....	" "
" "	" 16	" ".....	.....	.....	" "
Round bl.	" 16	" ".....	.....	.....	" "
Minie ...	" 16	" ".....	.....	.....	" "
" "	" 16	" ".....	.....	.....	" "
" "	" 16	" ".....	.....	.....	" "
Shell	" 16	" ".....	.....	.....	Recov'd for duty, with slight contraction of muscles.
Minie ...	" 16	" ".....	.....	.....	Recovered for duty.
" "	" 16	" ".....	.....	.....	The wound produced paraly- sis of lower extremities. Died July 19.
Shell	" 16	" ".....	.....	.....	Recovered for duty.
Minie ...	" 16	" ".....	.....	.....	" "
" "	" 16	" ".....	.....	.....	" "
" "	" 19	" ".....	.....	.....	" "
" "	" 18	Amputation lower third, (Skey's operation) Dr. H. Z. Gill.....	23	Chlorf.	Recovered; the patient was carried 30 miles on a litter, starting the day after the amputation.

Region of body injured.	Total No. wound'd	Deaths.	Nature of missile or weapon.						Operations and deaths.						Results.						
			Cannon ball.	Shell.	Bullet.	Sword.	Bayonet.	Other or un- determined means.	Amputa- tions.	Deaths fol- lowing.	Excisions.	Deaths fol- lowing.	Other ope- rations.	Deaths fol- lowing.	Chloroform ad- ministered in	Deaths from.	Recovered for duty.	Discharged.	Transf'd to Inv. Corps.	Results un- known.	Total.
Flesh wounds.	Head.....	4	.....	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	4
	Face.....	2	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	2
	Neck.....	5	.....	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	1	.....	.....	5
	Thoracic Parietes.....	10	1	3	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	1	.....	.....	9
	Abdominal Parietes.....	3	.....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
	Shoulder.....	5	.....	1	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	4
	Back and Hips.....	10	3	2	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	1	.....	.....	7
	Perineum, Genital, and urinary organs.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Cranial Bones.....	5	3	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2
	Bones of Face.....	9	2	1	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	1	.....	.....	7
Pene- trating wounds.	Thorax.....	7	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	2
	Abdomen.....	7	6	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
	Flesh Wound.....	18	.....	1	14	.....	.....	1*	3	.....	.....	.....	.....	.....	.....	.....	13	4	.....	1	18
	Fracture.....	4	1	1	2	.....	.....	1†	3	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	2
	Shoulder Joint.....	2	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	2
	Elbow Joint.....	4	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1†	2	.....	.....	3
	Flesh Wound.....	5	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	5
	Fracture.....	4	.....	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	.....	.....	4
	Wrist Joint.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Metacarpus.....	9	.....	.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fore- arm.	Fingers.....	16	.....	.....	15	.....	.....	1*	6	.....	.....	.....	.....	.....	.....	.....	13	2	1	.....	9
	Hip Joint.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
	Flesh Wound.....	20	5	.....	19	.....	.....	1†	.....	.....	.....	.....	.....	.....	.....	.....	12	3	.....	.....	16
	Fracture, upper 3d.....	3	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19	2	.....	.....	3
	“ middle 3d.....	2	2†	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	“ lower 3d.....	3	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19	1	.....	.....	2

Leg.	Knee Joint	5	3	5	4	25	170	9	24	5	3	2	118	36	3	8	165
{	Flesh Wound	20	1	4	16	1	1	1	1	1	1	1	1	1	1	1	1
{	Fracture	9	1	2	7	1	1	1	1	1	1	1	1	1	1	1	1
	Ankle Joint	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
	Metatarsus	8	1	3	4	1	1	1	1	1	1	1	1	1	1	1	1
	Toes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Concussion wounds with direct injury of large arteries, not being at the same time cases of compound fracture.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Undetermined wounds with direct injury of large nerves, not being at the same time cases of compound fracture.	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total		208	38	4	25	170	9	24	5	3	2	118	36	3	8	165	

* Canister. † Grape. ‡ Retained his position in reg. § Partial fracture. || One lived five months. ¶ Left at Jackson, Miss.
 ** Secondary Amputation.

H. Z. GILL, Surgeon 95th O. V. I (during the campaign),
 3d Div., 15th Corps, Army of Tennessee.

The material for the above report was collected at the time, and the history of the cases followed up for the next year by myself, as far as possible.
 H. Z. GILL,
 Brevet Lieut. Colonel, Surgeon U. S. V.

MICROSCOPIC INVESTIGATIONS.

A Brief of a lengthy series of Microscopic Investigations, connected with Paludal Exhalations and the Night Vapors Emanating from the Desiccating freshly exposed soil of Humid Low Grounds, new Prairie Lands and Peaty Bogs, and from the Drying Beds of Streams, Ditches, Lakes and Pools in Malarious Districts—Resulting in the Discovery of what appears to be the True Cause of Intermittent and Remittent Fevers, with some remarks connected with their Pathology and Treatment—

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It has been observed from remote times that the exhalations from drying marshes, and desiccating beds of ponds, pools and streams, have a noxious influence. These observations resulted early in vague notions as to the character of these emanations. Such notions were ill defined down to the time of Lancisi—about two centuries back. He gave to the world a treatise “*de noxus Puludum Effluviis*,” from which emanated the better defined views of the eighteenth century, which ascribed miasmatic emanations to vegetable decomposition.

During the present passing century, and especially for the past forty years, these views have been innovated upon by many who have carefully conducted chemical inquiries into the abnormal constituents of the mephitic atmospheres hovering over miasmatic localities. The meagre and unsatisfactory results thus obtained have created many dissenters from the vegetable decomposition theory, and have been the consequence of other hypotheses, the most of which are quite as untenable.

Some entertain the idea that decay generates a predisposing poison which, by being inhaled, is sufficient of itself to excite disease, while dews, cool nights and hot days may hasten the attack. Others look upon marsh exhalations only as a cause, which may enfeeble health and thus enable the meteorological changes of the summer and first autumn months to more readily excite disease, which may result, in many instances, without any such enfeebling influences. Others refer all periodical diseases to mere meteorological changes, only regarding marshes as aids in the way of presenting evaporating surfaces by which the air is made colder and damper. More recent authors, dissatisfied with these theories, have suggested a variety of explanations. The present commonly received *miasmatic marsh theory* is well set forth and sustained by McCulloch. Craige, of Edinburgh, in his *Practice of Medicine*, has handled the subject in a more learned and lucid way, presenting both sides of the question.

The objections presented by Craige are: 1st, *the low temperature at*

which the disease-producing changes may take place; 2d, the unaccountable production of them in places where there is no apparent vegetation and often no marsh; 3d, the exemption of certain places where occur all the seeming elements of decomposition; 4th, the effects of cultivation in eradicating the cause; 5th, and the sanitary variation of the same localities during different and similar years.

These objections show the critical character of Dr. Craige's observations. As we advance it will be seen that these obscure questions are cleared away by actual observation and experiment. Prof. Dunglison, in his work on Hygiene, ably presents the fallacy of the received opinions on the subject of the causation of malarious diseases, of which he holds we are yet totally ignorant.

Dr. John Bell is also antagonistic to the entertained views and refers all such phenomena to the modification of the sensible or appreciable conditions of the atmosphere. (Med. and Phys. Jour., 1825-6, pp. 274-3161.)

Rammasini, Daniel and Gardner believe that malaria originate or consist of sulphurous emanations; Hoffman, that malarious fevers arise from a lessened elasticity of the air; others, that they arise from the gases of decomposing organic compounds.

Ferguson believes that the only conditions necessary are soil and water; others attribute them to electrical and magnetic causes, while Dr. Mitchell believes that they are produced by a living organic cause, and that cause is cryptogamic.

The following list of cases, collected by Dr. Mitchell in his able little work on the Cryptogamic Origin of Malarious and Epidemic Fevers, are interesting in this connection as evidence against the organic decomposition and meteorological theories, and as evidence in support of the true cause of intermittent fevers.

1. The canal in St. James Park, London, was, at the time Dr. McColloch wrote, notorious for the abundance of its aquatic plants, causing in autumn an even intolerable stench, yet he congratulates the inhabitants on their miraculous exemption from malarious fevers (it being perhaps the only exception in the world, at least where the climate equals that of England.)

2. The town of Kingston, on the Island of St. Vincent, is situated at the bottom of a semi-circular bay, and at the foot of a mountain range, with high land on each side. The surrounding soil is thickly covered with decaying vegetable and animal matter. The Deputy Inspector of British Hospitals, Robert Armstrong, says: "There, then, we have all the elements necessary for the production of this vegeto-animal poison—heat, moisture, decayed and decaying vegetable matter, with as large a proportion of reptiles, insects and other animal matters, as is found in other tropical countries—yet, strange to say, the town of Kingston is one of the most healthy spots in the West Indies.

"I was informed by the Staff Surgeon to the forces, who had long resided there, that it was as healthy as the most favored spots in England."

3. Bishop Huber states that the wood tracts of Nepaul and Mulwa, having neither swamps nor perceptible moisture, become, in summer and autumn, so pestiferous as to cause their abandonment, even by the birds and beasts.

4. Fordice tells us that in a part of Peru, where there is a total absence of water and, of course, of ordinary vegetation, fevers and dysenteries render the country almost uninhabitable, and, according to Pringle,

the dry, unproductive, sandy plains of Brabant excite malarious fevers of great intensity.

5. New South Wales extend from $10^{\circ} 5'$ to 38° south latitude, embracing a region similarly situated to that of America from the West Indies to the Chesapeake Bay. It is subject to a rainy season, and has bays, streams, estuaries and extensive swamps, and around some of its towns there lies a deep, black, highly productive, vegetable mould. It is liable to extraordinary inundations, which lay the country as far as the eye can reach under a sheet of muddy water. The temperature is quite as high as that of any other like latitude. The coast is covered with mangroves and skirted by rocks, reefs and islets. Among its products are mahogany, oranges, lemons and guavas. The musquito with myriads of insects and reptiles, parrots, paroquets and other tropical birds, announce a bad productive climate and lead us to look for a tainted air and a pestilential habitude. But notwithstanding all these threatening conditions—the usual symbols of a sickly climate—New Holland is remarkable for its healthfulness. Pulmonary disease, and, in the wet seasons, dysenteries are observed, but the fevers incident to warm climate elsewhere are here of rare occurrence.

6. Mr. Titian Peale, the zealous and successful naturalist, who accompanied Captain Wilkes on the exploring expedition to the Southern Ocean, writes to Prof. Duglison that he never saw a case of intermittent fever in neither natives nor strangers, in the Polynesian Islands, although the officers and men of the expedition lived and slept in the midst of marsh stench and musquitos, when the days were hot and the huts open and exposed.

7. Captain Wilkes says: "*Tongatabo* is an organic island formed by coral, is rich, flat, and luxuriant, and oppressed by a temperature rising $98''$ and offering a mean during the sojourn of the expedition of $79^{\circ}, 25', 8''$. There was much rain, and when clear, heavy dews. The writer supposes that these phenomena must create sickness, but he sees many old people, and admits that although ashore at night, the people of the expedition were not sufferers." Mr. Peale also testifies to the good health of the place.

8. "Menouf, the capitol of Menoufger, in lower Egypt, is situated on the banks of a canal, formerly navigable, but so no longer. This canal bathes the walls of Menouf from south to west. Within a few yards of it lies another canal of stagnant water—the space between forming a road into the town. To the right of the south gate lie basins of water to rot flax in, which give out a disagreeable odor. Here and there is a cemetery and between them are pools for the same use, some of them broken and neglected and full of stagnant water. Menouf has no gardens, its streets are narrow and dirty, and its houses small and badly constructed. The people drink the Nile water. The yearly inundation floods the country around Menouf up to the walls, but it does not continue long under water, to which fact Surg. Currie ascribes its healthfulness. In addition to its other defects, the place is surrounded by a second wall, composed of dirt and rubbish transported from the town."—(Degenrettes.)

9. Dr. M. B. Hope says: "the Island of Singapore is in the main, low and level. * * The greater part of the island is covered with jungle situated on marshes. These jungles are almost impervious and infested with tigers and other ferocious wild beasts. Here and there the Chinese have cleared and cultivated the ground. The vegetation is incredibly rapid in growth, and equally rapid in decay, soil is rich, and mean] annual temperature of morning and evening $79^{\circ} 45'$, and at noon

84°. Astonishing as it may seem under such circumstances, fevers of any kind are very rare."

10. "The Empire of Brazil extends from the equator to the southern tropic. It is watered by vast rivers and countless streams, abounds in lakes and marshes, and under a burning sun smokes from the vapor of impetuous rains and boasts a vegetation unsurpassed for abundance, variety and rapid transitions. Beyond the coast-range of mountains the air is stagnant and hot; notwithstanding all these conditions, the country and towns are extremely healthy, even in the immediate vicinity of swamps and stagnant waters."

11. "Africa, under the same latitude, is full of fevers. The rains scarcely commence before the constitution begins to sink even without external exposure. According to Lind, the first rains that fall in Guinea are supposed to be the most unhealthy, and they have been known, in forty-eight hours, to render the leather of shoes quite mouldy and rotten. Mango Park mentions that the rain had not commenced three minutes before many of the soldiers were affected with vomiting, others fell asleep and seemed as if intoxicated. * * * Twelve of the soldiers were ill next day."

"The thermometer," says Boyle, "is seldom above 81° or below 69° at this period, but the process of decomposition proceeds so rapidly that cloth and animal substance, such as leather, become putrid in a period hardly credible."

12. "On one of the Isles 'de Loss, at Sierra Leone, a small force was soon destroyed, yet it is in the sea only about from a half a mile to a mile in diameter, and formed of granite which rises to three hundred feet in its centre. It is apparently free from supposed causes of fever. There is but one piece of areable land, no sulphur, no calcareous rock, no marsh and very little soil, not a swamp, and the temperature seldom rises above 80°."—(Boyle.)

Dr. Mitchell thus remarks after detailing the foregoing instances: "Other examples, almost without number, might be given of the salubrity of places full of decomposing matter, and of the insalubrity of others where scarcely a vegetable is to be seen, so that many reflecting men are now disposed to abandon a theory which can not be rationally sustained by a reference to facts, and which is shaken the more its pretensions are examined."

Views of Authors Respecting the Cause of Malarious Diseases.

With the view of presenting the general impressions and opinions of modern writers upon the theories suggested for explaining the cause and origin of fevers, I introduce here the following:

"Malaria is a specific poison producing specific effects on the human body, and is probably gaseous or æriform. Of its physical qualities we really know nothing."—(Watson.)

"We are utterly ignorant of the nature of this poison, and no two authors agree respecting its constitution, the circumstances under which it is generated, or its effects on the human body. * * * Of the existence of miasm we have no positive proof. It has never been obtained in an insulated state, and consequently we are totally ignorant of its physical properties."—(Robt. Armstrong.)

"If asked what is malaria, I answer, I do not know."—(Caldwell.)

"Hence, physicians have been reduced to the necessity of inferring the

existence of hidden atmospheric influences as a cloak of ignorance."—(Tweedie.)

FUNGOID ORIGIN OF FEVERS AND SOME OTHER DISEASES.

Dr. Mitchell's theory of the cryptogamic origin of Fevers, published in 1849, is the last one I believe presented to the public. It is purely hypothetical, yet arrived at by much careful study, and inductive reasoning from collected observations. He deserves much credit for the manner in which he treats his subjects, and especially for his apparently reasonable conclusions, in which he points out to future investigations a new field for further careful research. The fungoid origin of fevers is not a theory wholly new. In Spain, the populace believe that the fungi cause fevers.

J.S. Michael Seger of Vienna, in 1775, published a monograph on Mildew, considered as the principal cause of epidemic disease among cattle. He says: "The mildew producing the disease, is that which dries and burns the grass and leaves. It falls usually in the morning, particularly after a thunder-storm. Its poisonous quality, which does not continue above twenty-four hours, never operates but when it is swallowed immediately after its falling."

Nees Von Eesenboch stated, "that fungi of the most minute forms have their origin in the higher regions of air, and, descending to the earth, produce spots and stains." (Hecker, p. 205.)

In the malignant fevers of 1795 Webster states, that sound potatoes from market perished in his cellar in thirty-six hours. In speaking of the pestilential fever of New York in 1798, he remarks further, that he saw a cotton garment covered with dark gray-colored spots of mildew in a single night, and that such events were then and there common.

Boot, in his life of Armstrong, observes, that "the most remarkable circumstance connected with the diseases supposed to arise from malaria is their general prevalence in autumn, in every country where they occur."

Baron Humboldt remarks, that "at Vera Cruz, where May and June are hotter than September and October, the latter months greatly exceed the former in number and vigor of the fevers."

Prof. Mitchell remarks, that "if mere vegetable decomposition were the cause of such fevers, we should find them most active in May and June, when decay is much more active than in autumn."

In all countries, the most unhealthy period of the year is when the phenoganeous vegetation has completed its annual task of growth. This is the period when the microscopic cryptogams develop in the greatest profusion.

In Malarial Districts, the causes of Intermittent Fever only present themselves at Night.

The causes of intermittent fever, as has long been noticed, are quite inoperative during the day, even in the most highly malarious districts, while during the night in the same localities they operate with great activity. On this account it has been supposed that darkness is essential to their existence and influence. It will be seen, however, farther on, that darkness really has nothing to do with them, but that the cool, heavy exhalations from the earth during the night, simply elevate them above the surface; and that as soon as the sun rises to warm the air and dissipate the night vapors, they fall again to the earth's surface. As an illustration of this part of the subject, I will here cite some observations of previous writers.

Dr. James Lind relates the following case: "The Phoenix sloop-of-war, of 40 guns, was employed in 1776 on the coast of Africa, where also was the Hound, on the same duty. Both vessels, after a healthful cruise, put into the African island of St. Thomas, notorious for its pestilential character. Here, of the crew of the Phoenix, there slept on shore seven officers and servants; while three midshipmen, five seamen and one boy were also employed on a watering party, which detained them on land at night. Of these sixteen persons, only two survived the malignant fever that followed. The remainder of the crew, of 280 men, were permitted to go ashore in the *day-time*, when the men rambled about at pleasure, followed field sports, and washed their soiled clothing. Not one of these was attacked with any kind of fever, and before her return home the ship lost only one man, and he died of the effects of a blow on the head. The crew of the other vessel—the Hound—were permitted to visit the shore only in the *day-time*; of these not one died of fever."

Dr. Lind also gives another case in point: "In 1776 some French Protestants settled in a paludal part of Florida, where finally most of them perished. On some business, they were visited by eight gentlemen, more healthfully situated at a considerable distance, who spent one night there. On the following day, seven other persons from the same place, paid them a visit, but left their district before nightfall. Of the first party, every one was attacked with intermittent fever and two died, while of the other party not one individual suffered in the slightest degree."

Dr. James Johnson, in speaking of this subject, says: "While cruising or at anchor, between Batavia and Molacca, the crew lost but one man by fever, among those who had not spent the night on shore; whereas almost every one who slept even a single night at *Edam*, died. No ill effects were experienced by going on shore in the *day-time*; even being awake during the night when on land, did not protect the seamen from danger."

Surgeon Allen says: "At Zanzibar, all who slept on board ship escaped; every victim seen or heard from had passed at least one night on land. The captain and forty men of a French corvette, who had passed a night on land, were attacked by the coast fever, and not one survived."

Dr. Evans, writing from the island of St. Lucia, says: "During the day the sportsman wades through the stagnant water and mangrove bushes, which cover the surface of the West India fens, with comparative immunity; but long before the sun has disappeared, he places himself beyond the reach of their poisonous effluvia."

Dr. Webb, Inspector of Hospitals, stated before a committee of the British House of Commons, that "the men who remained on board the ships, in the noxious climate of Walcheren, were extremely healthy, although they went on shore to bathe and exercise daily, but never remained on land at night. Yet it was in this very place that the English army—encamped or lodged on shore—was almost annihilated by malignant intermittents."

Major Tullock, in his report on the health of the military and naval service, remarks, that "the sickness of the shore very rarely extends to the shipping, though only a few hundred yards from the land. The visits of the sailors on shore by day did not produce disease. In the Ceylon service, the mortality of the marine force by fever, was 3 in 1000; of the military, 24.6 to the 1000."

Many other instances could be referred to, to show the noxious character of emanations from certain lands at night, while during the day the emanations are innoxious. The reason of this will appear further on, when we come to speak of the true cause of intermittents.

Symptoms produced by the Introduction of Poisonous Cryptogams into the system.

So far as known, the effects produced by the introduction of poisonous cryptogams into the system, are interesting and peculiar. In most cases, no abnormal symptoms present themselves for some little time after their reception into the body. This dormant period may be called the incubation. After this period, which may be longer or shorter, a train of abnormal symptoms are ushered in, which are of a febrile character. These are sometimes continued, sometimes remittent, and at others intermittent. They are always accompanied by abnormal conditions of the epithelial tissues. Sometimes the epithelial derangement is confined to the glandular tissues internally, and at others, mostly to the cutaneous and mucous surfaces. The same cryptogamic poisons always produce the same, or similar abnormal states. The eating of mouldy food, such as meat, pies, bread and cheese have been known to produce severe sickness and even death. The symptoms, so far as noted, are those of a febrile character, often preceded, or accompanied by algid states. The agaricus muscarius produces, after an interval, rigors, followed by a train of symptoms resembling febrile intoxication. Potatoes affected with the rot produced by the botrytis infestuous, excite, when eaten, *first*, rigors, heat of skin, accelerated pulse, and abdominal pains. Second, rose-colored spots, migratory and evanescent, and diarrhœa. In the third stage, tumefaction of the muscles and neck, shoulders and arms, acute pain there, and in the worst cases erysipelas of the face and scalp, and oedema of the eye-lids. (O'Brien). In diphtheria, I have found the mycelium of a botrytis, resembling the *botrytis infestuous* growing in the exudation and in the subjacent epithelial tissues. I have called this the botrytis malignans.* In a lengthy series of experiments connected with the cause and prevention of camp-measels published in the July number of the American Journal of Medical Sciences for 1862, there appeared the strongest evidence for the belief that the minute cryptogams growing upon old straw, under certain states of the atmosphere, and under peculiar circumstances, may produce measels, etc. (See paper referred to.)

In erysipelas, so far as my investigations have gone, there appears to be developing in the capillary vessels of the parts affected the mycelium of a beautiful species of penicillium.†

The developing mycelium clogs up the capillary vessels, and the tumefaction and redness keep pace with the extending filaments of the fungus. It requires much care and experience in microscopic manipulation, as well as thorough knowledge of the appearance of fungoid filaments developing in animal tissues, to determine the presence of fungoid mycelia in the blood of the capillary vessels in this disease. Inexperience and a want of knowledge of these organic forms subject one to constant error. Such observations require time, patience and skill. In the early settlement of Ohio and Indiana there appeared in many localities a disease known as the "*Wheat sickness*." The eating of the flour of wheat from certain localities would always produce rigors, febrile symptoms, nausea and vomiting. The wheat from which such flour was made always had a small redish spot about the size of a pin's head, situated on the chit. There is no doubt but that this was a fungus developing in the grain.

* This plant will be figured and described in a paper now nearly ready, on what appears to be the true cause of diphtheritis.

† This will be described in a paper nearly ready, on what appears to be the cause of erysipelas, etc.

In certain glycogenic states of the system, a species of penicillium (fomela) develops in secretions of the mucus membranes so rapidly that a white curdy crust is formed on the tongue, throat, fauces, œsophagus, and sometimes dips down into the trachæ. This growth resembles a diphtheritic exudation, and is usually taken for such. The microscope readily settles this question. This growth is very apt to occur in low states of the system in all such as feed too exclusively on farinaceous and saccharine food. Such patients are subject to flatulence, pricking, or paralytic sensations in the hands, feet and legs, with a confused memory and creeping, chilly sensations, often amounting to quite severe rigors. Exhausting diarrhœas frequently follow, which may prove fatal. In these states, the patients are frequently affected with chills, small pulse and great anxiety, followed by febrile symptoms of an evanescent character. The use of rye, containing the secale cornutum with its parasites, often results in febrile symptoms, accompanied by a congested state of the capillary vessels, which frequently results in gangrene of the extremities, &c.

Similar symptoms have been noticed from the use of diseased wheat and corn.

Periodicity of Symptoms in Cryptogamic Poisoning.

One of the curious effects of many poisonous cryptogams on the system, is their tendency to periodicity. Christison relates an instance of an entire family, but one member, consisting of a woman and four children, who were attacked by a *tertian fever*, by living exclusively for four months upon edible mushrooms. The single member not attacked was the husband, who lived on other food. All those who had the fever were subsequently afflicted with a cutaneous eruption and gangrene of the extremities.

In persons poisoned by moldy food, Westerhoff observed an intermittent somnolency. In ergotism, intermittent symptoms are also recognizable.

Dr. Mitchell relates the following case: "A young woman who ate a dish of *agaricus clypeatus* was attacked with nausea and vomiting, bilious stools, and a frequent pulse, and had a marked remission on the fifth day. The patient was at ease throughout the night. The skin was moist and the pulse better. The other symptoms all abated, and the patient slept. On the fifth day the symptoms returned with sighing, delirium, anxiety, failing pulse, great dyspnea, partial yellowness of skin, and even a locked jaw, as in some cases of yellow fever."

Intervals from the Ingestion of Cryptogams to the appearance of the first Abnormal Symptoms.

Another peculiarity of cryptogamic poisoning, is the interval that occurs between the introduction of the poison and the appearance of the first abnormal symptoms. M. Paulet, in his work on Mushrooms, 1812, says, that the extract and alcoholic tincture, and even the juice of the *agaricus bulbosus* and *vernus*, when given to dogs, did not make them sick in less than ten hours after their administration. Christison relates an instance of the poisoning of six persons by the *hypophyllum sanguineum*, or toad-stool, in Scotland—most of whom were attacked after the lapse of 12 hours; one after 20 hours; one after 24 hours, and the last in 30 hours.

Gmelin gives 17 cases of cryptogamic poisoning where the poisonous effects did not exhibit themselves till about 36 hours after the cryptogams were swallowed.

Cryptogams developing on and in the Animal Body.

Cryptogams vegetate, in certain conditions of the system, upon the skin and mucous membranes of the human subject, producing a variety of obstinate diseased states. They produce the crusts of *Tovus*.

They are found in sycosis and in toichsis. They form curdy patches, resembling diphtheritia exudations upon the mucous membranes, as in apthoe of children, and the white patches covering the tongue, fauces, pharynx, and even larynx, in many low forms of disease where there is a saccharum or glycogenic condition of the system, produced, no doubt, by too exclusive vegetable feeding.

They develope, in certain states of the body, in the stomach, intestinal canal, urinary and genital organs; and are frequently found vegetating upon old ulcers. The *botrytis bassiana* attacks silk-worms, developing rapidly on their bodies, is transmitted from one individual to another, and frequently is ruinously destructive to the silk-grower.

Prof. Leidy, in his elegant work on the flora and fauna within living animals, gives many beautiful species of minute cryptogams that develop in profusion in the stomach and intestines of some insects and worms.

A species of *puccinnea*, that is frequently found parasitic upon the wheat plant, develops in profusion often during the summer months in the open mouths of the sudoriferous and sebaceous glandules of the skin. Many of the lower microscopic algoid forms are found frequently developing in profusion in the glands and glandular excretions of animals and men.

Active zoosporoid cells are sometimes met with in great numbers, moving rapidly in the freshly voided urine of the human subject, and also in the vaginal secretions.

Growing on and in the epithelium of the tongue, fauces, pharynx, larynx, and even on the surface of the bronchiæ, frequently occur abundant crops of minute algoid filaments, belonging to the genus *Oscillaria*. These are indicative of a bad condition of the secretions, and usually produce obstinate coughs, accompanied with febrile symptoms.

Fevers of an Intermittent and Remittent Type caused by certain species of Palmullæ.

All views upon the origin of malarious diseases, up to the present, have been purely hypothetical. No one has attempted a detailed series of investigations connected with the expectoration and other excretions of the human system; the bodies suspended in the night air of malarious levels, and inhaled, and the tracing of such abnormal bodies to their true source; and, finally, the developing of ague paroxysms with these bodies. With these few remarks, we will proceed to a brief description of the labors connected with the study of the origin and cause of intermittent fever.

During a lengthy series of careful experiments connected with camp diseases, and those affecting vegetation, as the "curl in peach leaves," and "blight in apple, pear and quince trees," and in studying the causes and consequences of fermentation, gangrene, decay, and the changes going on in diseased tissues, I was led by some of the experiments connected with bodies suspended in the atmosphere, in the direction of causes of fevers—and especially those of an intermittent type.

Intermittent fever began to show itself in the rich malarial districts of the Ohio and Mississippi valleys in 1862, during the month of May.

It did not, however, prevail to any great extent till the months of July and August. The weather had been unusually damp up to about the first of July. During August and September there was scarcely any rain. Springs and streams became very low, swamps and humid grounds became dry, vegetation almost entirely ceased to grow, and the country presented all the signs of a severe drouth. Soon after the dry weather commenced, intermittent fever, in malarial districts, became quite general. The disease rapidly increased during the months of July and August, till it had invaded nearly every family on ague lands. The observations were commenced by examining, microscopically, the expectoration of those laboring under intermittent fever, and who resided upon ague lands, and were exposed during the evening, night and morning to the cool, heavy, damp exhalations and vapors rising from stagnant pools, swamps and humid low grounds. In short, those who were constantly immersed in a malarial atmosphere, and where every one was more or less affected with symptoms of miasmatic poisoning.

The first salivary secretions and mucous expectorations of the morning were those used. In these secretions occurred a great variety of zoosporeid cells animalculæ bodies, diatoms, disnidiæ, algoid cells and filaments, and fungoid spores.

The only constant bodies, however, uniformly found in all cases, and usually in great abundance, were minute oblong cells, either single or aggregated, consisting of a distinct nucleus, surrounded by a smooth cell wall, with a highly clear—apparently empty—space between the outside cell wall and nucleus. Their peculiar appearance satisfied me, early in the examination, that they were not fungoid, but cells of an algoid type, resembling strongly those of the palmullæ. This part of the inquiry was extended to a great number of individual cases—on the low malarial levels, and to persons residing on elevated lands near and far removed from malarial influence. Wherever the mucous secretions were examined, from persons residing above the summit plane of ague, these bodies were invariably absent. They only were found below the summit ague line; whereas, diatoms, disnidiæ, fungoid spores and animalculæ bodies, extended to some extent to all heights above the line; especially were they found in the vicinity of damp high grounds and streams. After satisfying myself that these minute cells were the only forms found that could be relied upon as constantly present, on malarial levels, and not present above them, my next step was, if possible, to trace their source and character.

In order to effect this, I commenced suspending rectangular plates of glass, 16 by 22 inches, about one foot above the surface of stagnant pools, and marshy grounds that were partially submerged. The plates were placed horizontally, each resting on four pegs, a single peg supporting each corner of a plate. The plates were placed in position at dark, and secured in the morning before sunrise. Invariably the under surface of the plates would be covered thickly with large drops of water. This condensed vapor was subjected to careful microscopic examination. Many of the cells were found that occurred in the expectoration; but none of those minute oblong cells, so uniformly present in the morning expectoration, were met with. On the upper surface of the plates, however, these bodies were found in considerable numbers. I repeated the experiments for many nights, varying widely the localities, with the same results. In passing to the stagnant pools and swampy grounds southeast of the city of Lancaster, Ohio, to suspend the glass plates, I had to pass

over a rich, peaty prairie bog, where the water had become mostly dried off, and the surface broken by the tread of cattle. I had noticed that, in walking over this ground, a peculiar dry, feverish sensation was always produced in the throat and fauces—often extending to the pulmonary mucous surfaces—and that my expectoration was, after returning, uniformly filled with the minute oblong cells above described. This drew my attention to the partially desiccated peaty prairie bog, where the surface had been recently broken by the tread of cattle. I discovered on the recently exposed earth, what appeared to be a whitish mold, or more closely the incrustation of some salt. I here suspended the plates of glass, and the following morning, much to my delight, found the inferior surface of the plates covered with the minute cells which I was in pursuit of. I immediately returned to the bog, and secured samples of fresh earth that were covered with the incrustation and some that were not, and also portions of the boggy turf. On placing a fragment of the incrustation under the microscope, it was at once discovered to be made up of aggregated masses of the minute cells so uniformly met with in the expectoration of those exposed to the influence of the heavy cool vapors of malarial levels. It was further seen that these cells were algoid, and emanated from plants of a palmuloid type, as we had previously suspected; that there were several species, and that in the larger ones grew several species of mucid-mous fungi.

The locality where these first results were obtained is situated on the southeast side of the city of Lancaster, between the canal and railroad, and just east of the depot and starch factory. Here stretches out to the southeast, along the canal, a low peaty prairie bog, and in its vicinity, the surrounding bottoms are low and humid. The portion of the town (3d Ward) adjoining this bog, or all of it, situated below a line about thirty-five to forty feet above the bog, has always been a fertile field for intermittents. Those living immediately on the edge of the bog are frequently subjects of ague, yearly, from May to November. August and September are usually the worst months.

Mode of collecting Bodies in the Air elevated by the Night Exhalations from the Earth.

To determine how high above the low grounds the bodies on the under surface of the suspended glass plates were elevated, both at night and day, a small apparatus was used, which consisted of a glass screen standing perpendicular, and in front of it a large funnel, with the broad, open end pointing from the screen, and the small end terminating within one half inch of it. This was arranged on a pivot, and so constructed that the force of the currents of air kept the broad mouth of the funnel towards the wind. When an observation was to be made, the screen was covered with a concentrated solution of chloride of calcium, and the apparatus suspended at the desired height and left for one hour. The wind, passing through the funnel and falling upon the coating of calcium, deposits its small suspended particles upon the smeared screen. On examining, under the microscope, the liquid on the screen, after an hour's suspension, all the bodies floating in the atmosphere are found.

By suspending this apparatus at different heights above the low ague levels, at all hours of the day and night, the following facts have been ascertained:

1. That cryptogamic spores and other minute bodies are mainly elevated above the surface during the night. That they rise and are sus-

pended in the cold, damp exhalations from the soil after the sun has set, and that they fall again to the earth soon after the sun rises.

2. That, in the latitude of Ohio, these bodies seldom rise above from 35 to 60 feet above the low levels. That in the northern and central portions of the State, they rise from 35 to 45 feet; while in the southern, from 40 to 60 feet.

3. That at Nashville and Memphis, they rise from 60 to 100 feet and move above the surface.

4. That above the summit plane of the cool, night exhalations these bodies do not rise, and intermittents do not extend.

5. That the day air of malarial districts is quite free from these pulmulloid spores and from causes that produce intermittents.

Local Fever excited by Inhaling the Emanations from Malarial Grounds, and observations pointing in the direction of certain Palmullæ as the cause of Ague.

With the view of tracing more carefully the symptoms of the local fever produced in the mouth, fauces, throat and lungs, by inhaling the cells and sporoid bodies emanating from the vegetable organisms forming the incrustations on the drying rich, freshly-exposed soil of malarial grounds, on Sept. 2d, 1862, I visited the bog above referred to, and spent some time in wandering over the surface, examining the incrustations, and in collecting samples for further microscopic study.

In a very few minutes after my arrival on the bog, I began to feel a dry, feverish, constricted feeling in the mouth, fauces and throat. This feeling increased, till the fauces and throat became very unpleasantly parched and feverish. The opposite walls, in swallowing, adhered together, and the normal mucous secretions were quite entirely checked. There was a constant desire to swallow and hawk and spit, without being able to raise much of any thing, or to relieve in the least the dry, feverish, constricted sensations. This feeling soon extended to the bronchial and pulmonary surface, which became dry, feverish and constricted, with a heavy, congested sensation and dull pain. These peculiar symptoms lasted about two hours after leaving the bog before they entirely disappeared. The malarial matters inhaled appeared to be poisonous to the surfaces with which they came in contact, and there seemed to be an effort on the part of the exposed mucous surfaces to close up their absorbent and secreting organs, until this poisonous matter could be dislodged by the swallowing and hawking and spitting which they excited.

On the morning of the 3d of September I again visited the bog, to obtain more specimens for examination, and to study still further the symptoms produced by inhaling the malarious matter of ague bogs. I remained walking over the surface for about half an hour. The same train of symptoms manifested themselves that I experienced on the previous visit, being quite as severe, and lasting quite as long.

On the evening of the 3d, just at dusk, I again visited the bog, to suspend glass plates; I remained about 15 minutes. I had scarcely left the ground, when the dry, constricted, feverish feeling of fauces and throat commenced. I experienced the same train of symptoms as on the previous occasion.

Between this and the last of October I daily visited this and similar bogs, with the same result.

On Sept. 18 Dr. Effinger, at my request, accompanied me over the bog, with the view of determining whether he would be affected with the same

train of symptoms as myself. In a very few minutes after our arrival the symptoms began in his case as in my own, and he described them precisely as they have been already stated.

On Sept. 20 Dr. Boerstler walked over the bog with me and experienced the same symptoms. Dr. B. remarked, that he had often experienced the same or similar sensations before without knowing the cause. Numerous other persons, who visited with me the ague grounds, were invariably affected with the same train of symptoms.

The only constant foreign bodies found in the expectorations of those affected with the above local symptoms produced by walking over ague grounds, and the expectoration of those immersed in the night emanations of malarial levels, were the minute palmuloid cells previously described. The source of these cells was found to be the palmuloid plants, growing in such profusion on the drying soil of ague lands during the prevalence of intermittents. It is hence inferred that the minute cell emanations from these low vegetable organisms are capable of exciting local fever in the mucous surface, with which they come in immediate contact; and further, that there is strong presumptive evidence, from what has been previously determined, that, by repeated and continued exposure to them, they may cause general fever of either an intermittent or remittent type. This will appear more conclusive after perusing carefully the observations and experiments which follow.

On the northwest side of Lancaster, in the vicinity of the old Canal Mill, is another district of considerable extent, where the people are universally subject to ague. With a view of exploring for the local cause, I visited the locality September 12th. Immediately west of this infested district is a wide low prairie. A few rods south of the mill, and also west of it, I found the Ague Palmullæ growing luxuriantly, covering the surface of the soil recently thrown up by moles and exposed by the tread of cattle. In fact over the entire prairie, wherever the soil had been recently exposed, the plants were developing in profusion. While collecting samples for microscopic examination, I became affected with all the peculiar symptoms of local fever previously described. On the north edge of Lancaster, immediately on the west and south sides of Mount Pleasant, is another locality where ague prevails in its worst form, often running into fever of a remitting and continued type. There is a low belt of ground running through this locality along which are stagnant pools of water; around these and in the rich broken soil of the vicinity, I found the Ague Palmullæ growing in profusion. While collecting specimens for examination, I experienced all the symptoms of local fever as previously mentioned.

On the Columbus road, about one mile northwest of Lancaster, on the farm adjoining on the north the old Tallmadge place, occurred suddenly, about the middle of September, a severe case of ague in a strong healthy young man. This locality had previously been exempt from the disease. I visited this point in connection with Dr. Effinger, who was attending this patient. About fifteen rods south of the house we discovered a new ditch about ten rods long, running through a piece of low, black, humid ground. The freshly thrown out earth and the sides of the ditch were covered with Ague Palmullæ. While examining the soil along the ditch, and collecting specimens for the microscope, the mouth, throat, and pulmonary surfaces became dry and congested, as in previous instances. This ditch was dug by the young man about two weeks previous to his attack. On September 21st, in company with Dr. Effinger, I visited Mr. C. and family, who

reside five miles northwest of Lancaster, in a locality previously exempt from ague. Mr. C. was attacked with a severe form of the tertian type of intermittent fever on September 1st, and his wife on September 3d. The paroxysms were arrested on the fourth day of the disease with quinine by Dr. E., their attending physician. Relapse on the 15th was arrested after the second paroxysm. Both Mr. C. and wife, on September 21st, were much debilitated, pale and sallow. Mr. C's house stands upon a low terrace, elevated about thirty feet above the prairie bottom, which approaches within fifteen rods of it on the south and southwest sides of it. About fifty poles southwest of the house, a small creek running through the prairie bottoms empties into the canal. This creek during rains washes in sediment, and makes a troublesome bar across the canal. The lessees of the canal had purchased, a short time previous of Mr. C., an acre of ground at the mouth of this creek, for the purpose of excavating there a reservoir, to receive the sediment of the creek. About the middle of August the workmen began the excavation. The soil excavated was a rich peaty loam, with some black and blue clay. Very soon after the excavating was commenced, the workmen began to be taken down with ague, and very soon nearly every man was laboring under the disease. On September 21st Dr. Effinger and myself visited the excavation, and found the excavated soil covered with "ague plants," a quantity of which were collected for examination. While gathering them, both Dr. E. and myself were affected with the symptoms of local fever as previously described. Mr. C. who accompanied us to the excavation, became so much affected in the throat, fauces and lungs, that he had to retire from the place. Mr. C. stated that he and his wife slept in a room in the southeast corner of the house, on the lower floor, while the children, seven in number, ranging in age from two to fourteen, slept on the second floor, immediately over their . He and his wife were attacked with ague on the 1st and 3d of September, while all his children were entirely exempt and perfectly well. He also stated that early every morning he noticed that the fog from the reservoir grounds extended to the house, and rose about two-thirds the way up the first story, and entered freely his sleeping apartment through the open window, and had the same odor as the soil containing the ague plants, and produced the same febrile symptoms in the throat and fauces. He never had noticed this fog to rise as high as the second story, where his children slept. The foggy vapors disappeared soon after sunrise and before his children were up.

He stated that he had lived there over forty years, and had never had the ague before; that all his neighbors around, on the same and lower levels were now suffering from the disease. I mention this case particularly, as it is of peculiar interest, showing in a striking manner a quite uniform and marked line, indicating the summit plane of invasion, above which malarious causes do not extend.

In the eastern half of the city of Lancaster stands a hill, having an area of about one hundred acres. Upon its sides and summit the finest portion of the town is built. This hill rises to the height of about sixty feet above the adjacent low prairie bottoms, on its south and southeast sides. The heavy cold night vapors emanating from these bogs rise within fifteen feet of its summit. The upper surface of these vapors, in the morning before sunrise, is seen from the surrounding hills to be a broad level plane, limited by its contact with the adjacent hills. The line described around this hill, by the upper surface of these vapors, is a horizontal one, and marks distinctly the ague line. All of those living on the hill above this

line are exempt, all below are subject to the disease. Often those on the upper floor of a house escape, while those on the floor below are frequently all down with the disease.

If any cases occur above the summit ague plane, they are found to be in such persons as frequent the lower levels during the evening or early morning. During the summer of 1862, and especially during the months of August and September, intermittent fever prevailed to a remarkable extent in the town of Carroll, situated on the canal between Lancaster and Columbus. The site of the town and much of the surrounding country is low, and many boggy places occur along the canal.

During the months of August and September, the old and young of almost every family, including physicians, were down with ague. I visited this locality several times during these months and found the Ague Palmullæ growing abundantly on the partially desiccated boggy soil along the canal, and through the town and vicinity. I found the morning expectoration of all, more or less, filled with the minute cells of these plants.

Many other localities were visited where intermittent fever prevailed, and in every instance, without a solitary exception, the ague plants were found growing in the immediate vicinity of the disease; and in no instance were they found where disease did not occur.

An interesting instance of the readiness with which the emanations from the Ague Palmullæ produce the disease, presented itself the last of September, one mile west of the city of Lancaster, at this point, a few poles south of the pike, and about fifty poles west of Judge Van Trump's residence, is a small pond that affords water to a small flouring-mill. During the months of August and September, the water became low in this pond, and the Ague Palmullæ made their appearance in abundance on the drying peaty mud, from which the water had retired. From the time these plants appeared till the last of September, the wind was in the south. There being no buildings on the north side of the pond, there was no appearance of the disease. Near the last of the month, the weather became cool, the wind changed and blew briskly from the north and north-west. About thirty poles a little south-east of the pond, from twenty-five to thirty feet above it, on the hill side, a strong healthy laboring family resided who had been, up to this time, entirely free from ague. The wind blew over the pond directly towards this house, and about the fourth day several members of the family were taken down with the disease. The wind now suddenly changed to the south-east, blowing across the pond directly towards the toll gate—about forty poles distant, where a family resided in which were four small children. This family had been, up to this time, also, exempt from the disease. The third or fourth day two cases of intermittent fever occurred among the children, and soon after the father was attacked.

Here is an interesting instance of the transmission of the malarial influence by the winds. These families had lived for nearly two months in the vicinity of an abundant crop of Ague Palmullæ without taking the disease. The pond being small, banks abrupt, and soil around dry, no fogs or night vapors to any extent emanated from the place to diffuse the poisons. What malarial matter there was emanating from this point was borne from the north by the prevailing wind. As soon, however, as the wind changed and blew over the pond towards the neighboring abodes, the disease in a few days appeared.

A very interesting instance of the sudden occurrence of intermittent

fever at a point where it was never known before, occurred at the residence of Hon. John T. Brasee, one and a half miles west of the city of Lancaster, upon an elevated ground about one hundred feet above the ague lands and far removed from them. The locality has always been, from the first settlement of the country, (65 years) exempt from intermittent fever. The farm is abundantly supplied with fine large springs of pure free stone water, cold and soft. Near Mr. B's residence one of these springs occur. It has formerly supplied a small fish pond, containing about 10 square rods of surface. This pond, several years ago, had been drained, and the rich alluvial bed had become covered thickly with grass. About five square rods of it were spaded up, for the first time, in the month of July, 1863, for celery and vines. Ague Palmullæ began to appear on the freshly spaded soil about August 1st. A portion of these were white, like those usually met with, while others were of a brick red color, giving to the surface the appearance of having been sprinkled over with a thin layer of brick dust. August 8, Mr. Brasee and wife, who slept on the lower floor, began to feel languid, with loss of appetite and pains in limbs and back. August 20, Mr. B. had his first chill, which came on about 12 o'clock, (noon.) The paroxysm lasted about three hours, and was very severe.

August 22, Mrs. B. had her first paroxysm, which continued for about three hours, and was also very severe. August 23, the farm hand and his wife were attacked. Mr. B's residence stands about ten rods north of this patch of ague ground, and his tenant's house about 15 rods south of it. August 22, I examined the patch minutely. It was perfectly covered with Ague Palmullæ. Those growing on the dry prominences of the soil, were white; those on the retired, smooth; and on more damp portions, were the color of brick dust. The whole surface had the appearance of having been sprinkled over with brick dust and lime. No cases of ague occurred in that portion of the family who slept in the second story, nor were there any premonitory symptoms. August 24, the small ague patch was covered, at my suggestion, with a layer of straw, to the depth of six inches. On suspending glass plates over this for several nights, I obtained no traces of the Palmulloid spores or plants, while before the straw was spread over the plants, the glass plates were covered nightly with them.

The four cases of ague readily yielded to treatment, with no subsequent manifestation of the disease. The straw, in this instance, prevented the further development of the Ague Palmullæ, and prevented the spores of the already mature vegetation from rising in the damp night vapors.

Another interesting instance came under my observation in the city of Columbus, Ohio. On a visit to this place, during the last of September, 1863, I met Mr. Theodore Tallmadge, who stated to me that his children were all down with ague. He stated that his family had been spending a few weeks at White Sulphur Springs, and that about two weeks before they had returned home all hearty and well. In a few days after their return one of his children came down with ague, and soon after another. This surprised him, as ague had not previously been known to occur at his residence. Feeling satisfied that there must be some local cause, I, on the following morning, repaired to his house and examined his grounds. I immediately discovered a prolific crop of Ague Palmullæ, directly in the rear of his kitchen, in some new peaty soil he had drawn there a few weeks previous with which to level off the surface. I directed him to sprinkle the surface of the new soil thickly with caustic lime, after which he had no more attacks in his family.

On the rich limestone lands of the Maumee and Miami bottoms in Ohio, the black alluvial lands of the Wabash and its tributaries in Illinois and Indiana, the fertile prairie lands of these States and Missouri and Iowa, and on the rich low limestone and alluvial land of Kentucky, Tennessee and Mississippi, *Ague Palmullæ* develop in great profusion, especially during the months of July, August and September. For the most part, wherever the soil is free from lime and the water soft, the *Ague Palmullæ* developed are mostly white, or slightly tinged with yellow and green, and intermittents are comparatively free from congestive tendencies, and the types better marked, the eliminating organs much less liable to become bodily deranged, and the paroxysms more readily yield to the tonic influence of quinine and iron, and the disease is quite promptly and easily controlled, unless the system be exposed to continued and constant excesses. In limestone regions, however, where the water is hard and the soil highly calcareous, there is a remarkable tendency, during the months of July, August and September, for the malarious portions of the soil to become covered with *Palmullæ*, mostly of a different color from those found on soil not calcareous.

On calcareous soil the *Palmullæ* are usually pink, brick red, greenish or yellowish. The brick red and greenish plants are the most abundant. In such localities intermittents are apt to assume a congestive type. The functions of the eliminating organs (epidermic and mucus surfaces and portal and venal glands) become much deranged and their functions partially suppressed, oxaluria and often phosphoric follow, and in this condition of the system quinine, iron and arsenic, alone or combined, do but little good, and often, in old and bad cases, tend to aggravate the disease. If, however, in these severe forms, the functions of the eliminating organs be restored to their normal or to increased activity, by the proper diuretics, diaphoretics, expectorants and alteratives, the paroxysms readily yield to the tonic and anti-zymotic influence of quinine and iron.

College Hill, Nashville, Tenn.—This hill rises from 75 to 100 feet above the level of the Cumberland, which flows around its northern and eastern base. Upon this summit is an area of from six to ten acres. Here stands the University of Tennessee, and the residences of several of the faculty. When the Federal forces drove the Confederates from Nashville, all of the high points and eminences, in and around the city, were fortified for the better defense of the place. This hill was strengthened by a ditch six feet wide and four feet deep, with the excavated earth thrown on the outside and running around on the eastern and southern brows, which face the adjacent country. Soon after, the University buildings were appropriated for hospital purposes. This high point was supposed to be peculiarly healthy, from its elevated airy position, overlooking most of the city and surrounding country. As soon, however, as the warm weather of May and June set in, it was found that this high ground was quite malarious, giving rise to a peculiar type of congestive intermittent that was very severe, producing, in some instances, death. The attendants were more subject to the disease than the inmates of the wards. This probably arose from the fact that the former often exposed themselves to the evening vapors and exhalations outside, while the latter were mostly confined to the wards. This peculiar type of intermittent became much more severe during the months of July, August and September. The surgeon in charge, Dr. Lynde, was under the impression that this malarial influence came from the low ground to the east of this hill, which bordered on the river, and half a mile distant and one hundred feet below. This

on careful inquiry, was found to be highly improbable, as the malarial influence was much less marked on this low ground than on College Hill.

On carefully examining the soil on the perpendicular sides of the ditch, which was dug to strengthen the place, it was found covered completely with cryptogamic vegetation, forming, in places, a greenish and, in others, a brick red film on the surface. Samples of this soil were preserved in tin boxes for microscopic examination. On my arrival in Cincinnati three days after, this vegetation was carefully examined under the microscope and found to be composed of green confervoid filaments and *Palmullæ*, having mostly a pale green and brick red color. The *Palmullæ* were of different species from those met with on non-calcareous soils, and were similar to those in districts where intermittents are of a congestive type. Occasionally the soil on the hill where it had not been disturbed was covered slightly with this same vegetation. This was noticed all through the city and surrounding country, wherever there were any indications of malarious tendency. It was not, however, noticed in any great abundance, except where the fresh soil had been thrown up to a depth below where it has been usually disturbed in cultivation.

The city of Nashville stands on a series of small conical limestone eminences, which rise from 50 to 100 feet above the river. The limestone comes to the surface, or nearly so. This is so much the case that the rock is perfectly bare and denuded of soil over at least one-fourth of the surface, while the balance has a covering ranging from two inches to four feet in thickness. Wherever a cellar is dug it is sunk into the solid rock. The same may be said of all drains and sewers. The limestone is usually either porous, shaly or massive, and is rich in fossil remains.

The soil on College Hill is rather deeper than on most of the surrounding eminences, and the summit has a larger and more level area. The digging of this defensive ditch has changed the health of the locality regarded, of all others in and around Nashville, the most healthy. It has become now decidedly the most malarious and sickly.

Louisville and vicinity.—On the limestone soil surrounding Louisville, Ky., and in Jeffersonville, opposite, similar species of *palmullæ*, are developed upon the soil to those found at Nashville. All the low limestone lands in this region appear to be more or less malarious. Those just above Jeffersonville, where is erected the U. S. G. Hospital on the Chestnut Hill plain, are very malarious. This site is on a low terrace, about seventy rods back from the river, and rising about twenty feet above the river bottom. Immediately upon the brow of this terrace is located the hospital. The grounds had several sink-holes, filled with stagnant water which have since been filled up. Around the base of the terrace, springs for about a mile in length make out, forming a boggy, swampy strip of ground from ten to twenty rods wide. The south wind blows over this, directly up to the hospital. It is made up of a black sandy muck, underlaid with stiff clay. This produces, during the months of July, August, and September, abundant crops of *palmullæ*. On this account, the hospital is unfortunately located.

Cincinnati and Covington.—The low grounds around Cincinnati and Covington, during the months of July, August and September, produce the ague *palmullæ*, to some extent, and are malarious. Intermittent fever, often severe, is here met with.

Camp Dennison.—At this point is located the Dennison U. S. G. Hospital. It is about sixteen miles from Cincinnati, on the Little Miami Bottoms, and about twenty-five feet above the river bed. The soil is calca-

rious, being underlaid with limestone. The hospital inclosure contains one hundred and eighty acres of bottom land. Through it passes a shallow ravine, a drainage line from the adjacent hill to the river. The northern fifth of the grounds, previous to draining them in the spring of 1863, with open ditches, was damp, the surface-water standing till evaporated, the natural surface drainage being very poor. The wards standing on this soil were found to be unhealthy, the inmates being very much subject to intermittent fever. Since it was drained the wards have been empty. This soil over this portion of the ground, wherever it is exposed by eave drains, ditches and walks, becomes during the months of July, August, September and October, covered with a green cryptogamic vegetation, which, in places, has an ink-black color. This vegetation is composed mostly of confervoid filaments, which are frequently terminated, when mature, by sporangia. These sporangia are noticed where the vegetation has assumed an ink-black color with a metallic lustre. Mixed with these filaments are numerous palmelloid plants, of two species, one green and the other a brick red. When mature, these plants, as they become dry send off multitudes of minute spores which are elevated in the night exhalations. There is also met with on calcareous soils another species of a metallic lead color by reflected light. By transmitted light, they have a dirty brownish-green color.

Palmullæ growing upon desiccating peaty bogs; upon the drying beds of pools, ponds, ditches and streams; upon the recently exposed new soil of rich, humid low-grounds and prairie lands; and upon the rich, calcareous soils of humid localities in malarious districts.

The palmullæ belong to the simplest form of vegetable life. They are grouped under the division *Chlorospermæ*. This division is divided into three groups—the first is composed of those plants that are cellular; the second, of those that are filamentous; and the third, of those that are faceaceous.

These three groups are subdivided into twelve orders. Of these twelve orders, three belong to the cellular group. These are—

- 1st. Palmullæ.
- 2d. Dismidiaceæ.
- 3d. Diatomaceæ.

We have here only to speak of the palmullæ, the very lowest vegetable organisms known. Organisms—one class of the spores of which are closely allied to animalcular bodies and have frequently been described as such, on account of their activity. These active spores (zoospores) move about actively like little animals during one period of their existence. The palmullæ have several quite distinct types. In one, the plants consist of cell-like bodies, made up each of a thin outside wall, inclosing an inside cell filled with minute double-walled nuclei, or spores. These cell-plants have been noticed to be developed and inclosed in a parent membrane, which contains from one to many individuals. These plants multiply within the parent membrane, by successive duplicative segmentation. They are also developed from spores. The several forms of this type, that are constant accompaniments of intermittent-malarial disease have received the same generic name, (*Gemiasma*,) (earth miasm).

Gemiasma, (SALISBURY.)—Plants have the appearance of cells, each made up of a thin outside wall inclosing an inside cell filled with minute spores, either single or aggregated, multiply by duplicate segmentation with a parent membrane, and also are developed from spores. They are

of different colors—red, green, yellow, white, plumbous, &c. There are several species which seem to act as malarial poisons. The brick-red, the green and the plumbous colored plants are found developing, principally, upon rich, calcarious soils, while the greenish, yellow and white varieties are found mostly upon non-calcarious grounds.

G. Rubram, (SALISBURY.)—Color brick-red, gives the soil the appearance of having been sprinkled over with brick dust. Produces intermittents of a conjestive type.

G. Verdans, (SALISBURY.)—Color, green.

G. Paludis, (SALISBURY.)—Color, greenish, formed mostly on non-calcarious soils.

G. Plumbans, (SALISBURY.)—Color, plumbous, by reflected light, and a dirty brownish-green by transmitted light.

G. Alba, (SALISBURY.)—Color, greenish or yellowish-white.

In all these species, the mass of the visible dust or incrustation upon the soil, is usually made up of incalculable multitudes of minute spores that have escaped from the plants beneath them. The most minute of all known organic cells are the organisms that are elevated in the night earth exhalations.

Another type, consists of jelly-like protuberances, single or in groups, made up of a thin, external membrane, inclosing a highly transparent gelatinous material filled with minute double-walled spores. This type has received the generic name—*Protuberans*.

Protuberans.—(SALISBURY.)—In these the double-walled spores are developed in a highly transparent jelly-like form, surrounded by a delicate membrane. These are various shades of green, yellow, brown and perhaps other colors. Another type of plants, seem to multiply by merely the extending laterally of a thin lamina or gelatinous layer, which, like the protuberant variety, consists of an outside parent membrane, within which is a gelatinous matter, filled with a multitude of minute double-walled spores which escape in vast numbers as the lamina dries. This type has received the generic name ———.

Lamella.—(SALISBURY.)—All these genera have spores of a similar structure. The spores are mostly oval or more or less oblong, and have double walls.

The spores of the protuberance are larger than those of the other genera, and the space between the nucleus and outside cell wall is more marked. In the *Palmullæ*, there are two modes of propagation, one by division and the other by spores, and both of these are common in the same species.

These plants are very prolific, springing into existence in a few days in vast multitudes, during the hot summer months, on the drying beds of ponds, stagnant pools and ditches, on the broken soil of humid, low grounds and new prairie lands in malarious districts.

The species are many, all of which have heretofore been regarded as innocuous. There is strong evidence for believing, however, that the minute species that are developed in such abundance in the above named localities, and the spores of which become elevated and suspended in such multitudes in the heavy, humid night exhalations of ague districts are decidedly poisonous to the epithelial surfaces with which they come in contact, and are the true source of intermittent and remittent fevers. So far as I have examined, (and my observations have been widely extended,) I never have found a case of ague in any locality but that (if such locality was inhabited,) intermittent or remittent fever, or both prevailed in proportion to their extent and profusion.

As early as the dry, warm weather of spring and summer evaporates the surface water, and begins to dry off the recently exposed soil of rich, humid, low grounds and peaty bogs in certain localities, a peculiar white, green or yellowish, or greenish white, or brick-dust powder will be noticed making its appearance upon the surface. This is thicker in such places as have been recently broken, exposing fresh earth. It also varies considerably in appearance, according to age, rapidity of surface, drying and peculiarity of soil. It is not confined to desiccating peaty bogs and humid, low grounds, but is common to the drying beds of streams, pools, ponds and ditches, and also to calcareous soils, and even sandy plains in humid localities.

On the drying of the newly-exposed soil of rich prairie lands and humid, low grounds, this vegetation appears white and much thinner than on desiccating, peaty bogs. This difference arises from the development on the latter of some larger species than grow upon the former, while the small species of the former are common to the latter. These plants occupy the projecting points and prominences of the soil, and resembles, to the unaided eye, an incrustation of saline matter. During the drying of the soil these plants develop rapidly and as rapidly disintegrate and set at liberty their spores which become elevated and suspended in the damp, heavy night exhalations. These exhalations suspending, these palmelloid cells and spores rise, usually, so that their upper surface, in the northern and western States, is marked by a plane, varying from thirty-five to sixty feet above the surface of the agree grounds. The upper surface of these exhalations describes a horizontal plane, stretching away from the place of origin, in the direction traced by the wind. The spores and cells of palmellæ are found diffused throughout these vapors, but do not extend above them. They occur, however, more abundantly at and near their upper surface than lower down. This will explain the singular fact, often noticed, that at a certain distance above the agree bottoms, along the side-hill, malarious diseases are often worse than on the bottoms themselves. The zone occupied by these exhalations has a temperature and hygrometric condition of its own, differing materially from the stratum of atmosphere resting immediately upon it which is much warmer and dryer.

Plants in the Urine of Agree which act as an Exciting Cause.

The urine of several hundred cases of intermittent and remittent fever has been subjected to careful microscopic examinations, with the view of arriving at general results as to the abnormal bodies present. The urine was, in some cases, voided before treatment had commenced, in others after treatment had been continued for some days without breaking the paroxysms, and in others the paroxysm had been broken for the time with quinine, while the fever poison still remained in the system. The urine was voided either in the algid, febrile, or sweating stage of the disease, between the paroxysms, or after the paroxysm had ceased for some days. The results of these examinations are highly interesting. They establish the fact that agree plants, the same as grown upon the agree soil, are constantly developing the system of the intermittent fever patient, and that the urinary organs constitute one important outlet for the elimination of this fever vegetation. That the urinary organs, with the perspiratory apparatus, are the important channels through which nature strives to rid the organism of the exciting cause, and through which the physician should operate by all the medicinal means at his disposal to eradicate the

disease. They explain to us the important reason why it is that quinine breaks the continued recurrence of the paroxysms, while it does not eradicate the poison; and why diuretics, diaphoretics, expectorants, and such all important agents aid in eliminating from the system the malarial cryptogams, while quinine gives tonicity to the system, by its action upon the organizing processes of the epithelial tissues, and through this imparts such tonicity to the nervous system as to enable it to resist the paroxysm. It is well known not to exterminate the exciting cause, although it may control, for a time, its further development in the same way that checks the multiplication of yeast plants in fermentation.

This exciting cause must be carried out of the organism through those excretory channels which nature has provided for the elimination of effete and abnormal products. The principal of these are the perspiratory apparatus, the mucous surfaces and urinary organs. That the perspiratory apparatus performs, in this disease, an important office in this eliminating process, we should long ago have understood, from the fact that through this excretory system nature so powerfully acts, in her efforts to eliminate the abnormal and poisonous products of the disease. The sweating stage of the paroxysm of ague is essentially a curative one. These examinations have also established the fact that in intermittent fever conditions torrula cells are present, indicating the presence of glycogenic matter in the urine. Cholesterine is also uniformly present in this excretion. Both glycogenic matters and cholesterine are found in the liver and spleen. The spleen is the great manufactory of cholesterine,* and at the same time organizes some glycogenic matter, as is evident from the development of torrula cells in the spleen, when it is removed from the body and allowed to ferment. The liver is the great apparatus for organizing glycogenic matter. The kidneys never normally organize or excrete these bodies. In intermittent fever we see, then, that the functions of the liver and spleen, of secreting glycogenic matter and cholesterine, are in part taken in by the kidneys, indicating perhaps something like a metastasis of function, and pointing us to these organs for disturbances that are excited by the cryptogamic poison of ague. There is also found uniformly in the urine, the spores of a species of fungus, generally vegetating, belonging to the genus *Sphaerotheca*, and which is almost uniformly found growing on and in the large species of palmullac, belonging to the genus *Protuberans*, and also in the apple, pear and quince, producing decay in these fruits. I do not know as this plant produces any abnormal influence upon the system, as it is often met with, in health, in urine.

The ague plants occur in the urine in the form of little cottony flocs, so small that they are scarcely, to the unaided eye, noticeable, and too few in number to communicate turbidity to the excretion. They vary greatly in amount present in different cases. They are uniformly more abundant when the disease is severe, and has continued for some time. They are very light in color, highly transparent, and appear to be developed in the bladder, pelvis of kidneys, and ureter, often in considerable numbers. In some cases of ague of long standing, yeast plants, species of penicillia and aspergilli, are also found developing in large numbers. The mycelia often rising to the surface, a short time after the urine is voided, producing fertile threads and fruit. These plants were largely developing in the urine of several patients in the month of September, who had been laboring under the disease most of the summer. In several instances of this kind I have known the intermittent to merge, after some

* See my papers on the minute structure and functions of the liver and spleen.

weeks, into continued fever of a typhoid type. In all cases of this kind, the patients had been receiving constant accessions to the disease by being exposed daily to the exciting cause.

Plants in the urine of Intermittent Fever, that are the consequence of peculiar pathological states of which they are indicative.

In the urine of all cases of intermittent fever the spores of penicillia are present, indicating the presence of glycogenic matters, undergoing fermentative changes. These cells are generally more abundant in obstinate types, and in cases of long standing, than in the milder forms and recent cases. In several instances in observations, when the patients had been laboring under severe and obstinate forms of the disease (such as were exposed to constant occasions) for many weeks, tending typhoid states of the system, the urine was found containing numerous vegetating fungoid filaments, which were the developing mycelia of moulds belonging to the genus *Penicillium*, *Aspergillus*, or *Sphaerotheca*. In these obstinate cases of the disease the urine passes rapidly to the acetous fermentation, even before it is voided, ushering in filamentous development in the cryptogams present. This fermentation progresses so rapidly that in a few hours after the urine is voided, putrefactive fermentation begins, and small white cotony flocs, or tufts of fertile threads, appear above the surface. These soon bear spores, when the plants are discovered to belong to either the genus *Penicillium*, *Aspergillus*, or *Sphaerotheca*.

There is a beautiful species of penicillium often present, having symmetrical heads, the stem dividing first into four equal pedicels, which ascend close to each other, and soon sub-divide each into four pedicels, each one of which bears a long moniliform line of spherical spores. I do not know that these cryptogams are at all injurious of themselves, but they indicate the presence of glycogenic matter and rapid fermentative changes, which are abnormal. They are, probably, merely the consequence, and not the cause, of the existing pathological state.

Experiments connected with the production of Intermittent Fever.

With the view of obtaining still more positive evidence of the intimate relation between the cause of intermittent fever and the cryptogams developing upon drying humid soils, &c., I filled six tin boxes with the surface earth from a decidedly malarious, drying prairie bog, which was covered completely with the palmellæ previously described. Cakes of the surface soil were cut out, the size and depth of the boxes, and filled carefully, without disturbing, more than possible, the surface vegetation. The covers were then placed on, and the boxes transported to a high, hilly district, some five miles distant from any malarious locality, and where a case of ague had never been known to occur. The locality was over 300 feet above the stream levels; was dry, sandy and rocky. There placed the boxes of cryptogams on the sill of an open second-story window, opening into the sleeping department of two young men; removed the covers, and gave particular directions that the boxes should not be disturbed, and the window left open. On suspending a plate of glass over the boxes on the fourth day, during the night, the under surface of the plate, the following morning, was found covered with palmelloid spores, and numerous cells of the same kind adhered to a suspended plate in the room, which was moistened with a concentrated solution of chloride of calcium. On the twelfth day, one of the young men had a

well-marked paroxysm of ague, and on the fourteenth the other was taken down with the disease. They both began to feel unnatural and dull about the sixth day. All three stages of the paroxysms were well marked. The type in both cases was Tertian, and was readily controlled by the appropriate remedies. Four members of the family slept on the lower floor of the house, but none of them were affected. The experiment was repeated at another point in the same neighborhood, where one young man and two boys were exposed in the same way as described in the previous case. In this instance the two boys were taken down with the disease, one on the tenth and the other on the thirteenth day of the exposure, while the young man escaped. On account of other duties and the difficulty of obtaining the consent of parties for experiments, I have been unable to conduct this part of the examination further. The experiments thus far are most highly interesting, and confirmatory of the previous observations and results of this extended inquiry, on which three years of almost constant labor have been bestowed.*

Some General Remarks concerning the Pathology of Intermittent Fever.

The lesions in intermittent fever are confined mostly to epithelial structures; showing quite conclusively, that the exciting cause acts primarily upon the parent epithelial cells, or those cells that either organize the products that nourish the several tissues, or disorganize those of interstitial decay, so as to prepare them for ready elimination. These derangements consist in the altering and enlarging of glandular structures, and inflammations and alterations in structure and function of the mucous epidermic, mucous and serous surfaces. All other abnormal manifestations are either symptomatic of these, or are the result of previous disease in the organism. All the glands in the body belong strictly to epithelial tissue, and are made up mostly of parent epithelial cells. The structures are affected in time and extend, apparently, in proportion to their importance, in either organizing and assimilating products for nutrition, or disorganizing those for elimination. Of all the lesions in fatal cases, those of the spleen and liver are the most frequent. The spleen increases in bulk and consistence; its structure is easily torn, its interior often being found to be broken down and composed of a blackish-red pulpy mass, with which are mingled fibrinous portions of a lighter color.

Morgagni gives one case where the spleen weighed 8 lbs.; and another is mentioned by Bailey that weighed nearly 10 lbs., the structure being entirely converted into a pulp. The spleen has been occasionally ruptured,

* Since this paper was prepared, another interesting instance of these plants producing ague has occurred directly under my eye. About the middle of October, one of my patients (a gardener) laboring under severe ague, brought to me, at my request, a large *tin pan* full of masses of soil completely covered with ague palmullae. These I took into the office of Dr. House, in order to place some in small ward cases, for exhibiting during the winter in my lectures. They were accidentally placed under the Doctor's working table, loosely covered with paper, and forgotten. About the first of November Dr. H. began to have pains in his bones, and feel dull and heavy. November 6th he had a distinct paroxysm of ague. This surprised him much, as he had not, to his knowledge, been exposed to malarial poisoning. On the following evening the pan was discovered under his table and removed. I had growing in his office, also, some fifty or sixty species of minute conferræ that develop upon soils. These were growing under glasses, and were designed for microscopic study during the winter. Since these were placed in his office he has had a severe cough. On examining the epithelium of his tongue, throat and fauces, a multitude of minute confervoid filaments were found developing in and on the mucus surfaces of these parts.

and the broken down and altered tissue emptied into the abdominal cavity. This indicates an altered condition in the organizing process of the parent epithelial cells of the organism, by which the fibrinous matters and other products of the blood formed, become deposited in the splenic tissue; thus producing enlargement (so-called ague cake), which often, if the patient is not removed from constant accessions to the disease, and the exciting cause not eliminated from the organism, result sooner or later in disorganization, and frequently in disintegration of the gland. The liver is also, in some cases, found greatly enlarged, but altered but little in structure. In others, it is softened and filled with black blood, or tuberculated, or containing purulent deposits.

The pancreas is also frequently hardened so as almost to resemble scirrhus. The mucous membrane of the stomach, duodenum, and small intestines, are likewise sometimes involved. The mesenteric glands are frequently enlarged, and are subject to very nearly the same derangements in function and structure as the spleen. The exciting cause inhaled, taken into the system in food and drinks, and absorbed by the skin and mucous surfaces, comes in direct contact with the epithelial cells, spread over and covering the entire body, both externally and internally, whenever there are any ways by which external bodies may enter the organism. The epithelial cells, hence, make up the first tissue of the system with which these poisonous bodies come in contact. These cells they have to pass through, before they can enter the systemic circulation and reach the vascular tissues. In passing through these cells, they derange them so as to poison the products they organize. In this way the other tissues, including the ganglionic and cerebro-spinal systems, become involved. As the epithelial cells of the glands, especially those of the spleen, mesenteric and liver, are the most largely engaged of any in organizing nutrient products for the other tissues, these glands are the most severely taxed, and are the first to suffer extensively from the poisonous palmullæ and hence it is that in these we find so frequently grave lesions.

When the tissues have become poisoned to a certain extent, there is a reaction on the part of the system—an effort of nature to eliminate the poisonous products already in the body. This effort is the paroxysm, which constitutes what we call the disease. We can readily see how it is that the blood should become thin (deficient in fibrin), as soon as the functions of the spleen are partially, or wholly suspended. This being the gland which organizes fibrin more largely than any other, if its functions in this respect be suspended by the blocking up of the *oval splenic bodies*, which partially organize fibrin, one great source of this product would be cut off from the blood. The fibrin already in the blood, becomes deposited in the tissues, and one important source being cut off, the blood becomes thin and deficient in this body. This thin blood fills up all the portions of the organ not occupied by masses of fibrin, and hence the ease with which the blood contents of the spleen may be washed out. Whenever the whole mass of the blood becomes very abnormally thin, we may look to the spleen for the primary lesion. Some of the interesting symptoms of intermittent fever, when the spleen is involved, Dr. Tweedie says, “are depression of spirits, torpor of mind, inactivity of body, with much muscular debility, deadly paleness, or a yellowish hue tending more to black or green, than in ordinary hepatic disease. There is great liability to hemorrhage from various regions of the body, to dropsy, to dysentery, and to ulcers of the legs. The spleen is liable to take on a morbid condition, in continued fevers, as well as in intermittent. Diseases of the

heart, stomach and liver, are liable to be accompanied by disease of the spleen. The spleen is more liable to be affected with disease in damp, marshy localities, than in other situations. In intermittent fevers, there is a diminution of the globules and fibrin; softening, and the breaking down of the spleen, is common in intermittent and continued fevers, in scurvy, and in some varieties of malignant dysentery." By understanding the true function of the spleen, these symptoms and lesions are all traceable to their true causes.

Depression of spirits and torpor of mind, may arise from either oxaluric or phosphatic states, or from a defective or suppressed organization of some of the nutrient products of nerve tissue; inactivity of body and muscular debility, from a deficient supply of fibrin to muscular tissue; the yellowish hue, to a defective supply of red globules; the great liability to hemorrhage in different parts of the body, dropsy and dysentery, to thinness of the blood, and the defective supply to it of its normal products.

The probable reason why the spleen is so liable to take on a morbid condition in continued fevers as well as in intermittents is, that the exciting cause of both affect primarily the epithelial tissues, and have a tendency to derange those portions most which are the most actively engaged in organizing nutrient products. The reason of which appears to be, that the exciting causes exist alike in the materials we eat, drink, inhale, and absorb through the skin.

The reason why the spleen is more liable to be affected in damp, marshy localities than in other situations, is, that in the former districts, miasmatic poisons impregnate more or less the air, water and food.

The reason of the diminution of fibrin, or red globules in the blood, in intermittent fever, is the greater or less suppression of the normal functions of the spleen and mesenteric glands.

Treatment of Intermittent Fever.

Since nature in the last stage of the paroxysm excites all the excretory organs of the body, and especially the perspiratory, urinary, and mucous surfaces generally, and as their excretions contain spores and plants of the ague palmullæ, it is evident that the sweating stage is a curative process; if so, it points us to important medicinal means as aids in eradicating the poison. These are diuretics, diaphoretics, expectorants, and alteratives. While we should keep quinia constantly in the front rank, to impart tonicity to the ganglionic and cerebro-spinal system and to epithelial tissues, and to control in the body cryptogamic development, we should use diaphoretics, diuretics and expectorants freely, as eliminators. The nightly sweating of a patient, laboring under this disease, might be supposed to result in enervating the system. The reverse, however, is the case. Under active nightly diuresis and diaphoresis, in ague, the sallow countenance rapidly clears up; the dull eye becomes bright; the depression of spirits, and torpor of mind and body, disappear and give place to the elastic step and tonicity of muscle. The result is, that even when the system is exposed to constant accessions, the paroxysms are not only avoided, but organic lesions, and the long train of unpleasant symptoms, are not allowed to get their hold upon the system, the ague poison being eliminated as fast as taken into the organism.

In cases where the patient is removed from the exciting cause, the system is soon thoroughly cleaned out, and no ague returns the following spring, unless there are new exposures.

Quinine in Intermittent Fevers.

The power of the system to resist the paroxysms of ague varies greatly in different individuals, and even in the same individual, at different periods. This power of resistance is directly proportioned to the tonicity of the system. Habits of bracing, active exercise, such as horseback riding, will often protect the system against attack. This is noticed, in a marked degree, in the cavalry and infantry service of the army. In malarious localities, the former are seldom attacked, if on active duty, with intermittent fever, while the latter are extremely liable to suffer. This is the case when both branches of the service are occupying the same malarious district, and equally exposed.

Quinine, as a prophylactic, enables the system to resist the paroxysms. It braces up the system, and controls cryptogamic growth, till nature can effect a cure by eliminating the malarious cause, through the skin, mucous surfaces and kidneys. Quinine, then, is not, strictly speaking, a curative, or specific agent, but simply acts beneficially, by controlling cryptogamic development, and imparting such tonicity to the organism as enables it to resist the paroxysms, till aided nature can cure the disease by eliminating the cause. Any cause that enervates the system in malarious regions tends to bring on the paroxysms earlier than they otherwise would appear. Very frequently it is noticed, especially when the system has been under the influence of the disease for some time, and most especially if the disease is contracted in a region where there is a tendency to congestive paroxysms (limestone regions especially), as in the southern part of Tennessee, in Mississippi and Louisiana, quinine appears at first to have some influence in enabling the system to resist the paroxysms, but soon loses its power. In fact, in many instances, it really aggravates the paroxysms, as is evidenced by stopping the quinine entirely. In such cases the skin will be found dry, the mucous surfaces less active and covered with a scant, clammy, mucous secretion, and the venal secretion small; in fact all the eliminating organs have their functions deranged and this normal action partially suppressed. As long as these are in this condition, the malarious poison is hemmed up in the organism, so much poisoning the tissues that the tonic influence of the quinine rather tends to aid, frequently, the abnormal actions than to restore the normal tone. If, however, the normal functions of the kidneys, skin and mucous surfaces are restored with diuretics, diaphoretics and expectorants, and the spleen and liver properly attended to, quinine again will act beneficially and impart its usual tonic effects, and the disease will soon be eradicated, especially if the patient be removed from constant accessions.

It is highly important to constantly endeavor to keep the eliminating organs in a healthy and rather increased state of action, when the system is under the influence of any malarious poison, as it is through these channels that the causes are eliminated. We have, then, in this disease, no such thing as a specific in *quinine*. It simply imparts tonicity to the system and controls cryptogamic development, till nature, aided by remedial means for exciting the secretions, is able to eliminate the poison. These principles should be strongly impressed upon the mind of the physician who has charge of malarious diseases. Many old and obstinate cases of ague, with the system filled with the malarious poison, and all channels of egress closed, are being daily dosed largely with quinine, arsenic and iron, with little or no effect, with the view of curing the disease in some empirical and mysterious way, by these so-called *specifics*. The very name *specific* should be blotted from medical science, and left

entirely to the *quack*, who knows nothing else. There is really no such thing in medicine. All we can do in any disease is to aid nature, and to follow her as closely as possible in her curative processes; and this we can only do wisely and well by understanding fully the true cause and pathology of every disease we treat. In treating intermittent fever, it is of the first importance to correct any abnormal condition of the portal system, and to accompany this by diuretic, diaphoretic and expectorant remedies, to excite into activity all the eliminating organs of the body. It is impossible to mark out a fixed cause for all cases. The following prescriptions will, however, illustrate the general plan of treatment:

R—Potass acetate, ʒij.
 Spts. nitre dulcis, ʒj.
 Syr. squil. comp., ʒss.
 Aqua. menth. pep., ʒviiij.

M. 3. Take from one to two tablespoonsful in a glass of water, morning, noon and night. Every evening, on retiring, take a warm diaphoretic draught. Also take,

R—Quinia sulph. grs., xxxii.
 Strychnia sulph. gr., $\frac{1}{4}$.
 Blue mass. grs., xi.
 Pulvis capsicum. grs., xx.
 Ferri lactate. grs., xx.
 Ext. gentian.
 Syr. aa., q. s.
 Make pills xxxii.

S. Take two pills every two hours, till sixteen are taken. Every day, or every other day, according to the type of the disease, take four pills two hours before the time for the paroxysms.

At the end of ten days take two pills every two hours until sixteen are taken, and continue as before for ten days more, then take sixteen more pills. By this time, if the eliminating remedies are kept faithfully up, the patient will be thoroughly cured, if he is not exposed to constant accessions. If he is, the eliminating organs must be constantly kept excited, that the cause may be removed as fast as it enters. By this treatment a paroxysm need never occur after the commencement of the remedies.

Means of Removing the Cause.

The means are within our reach for removing the prolific cause of intermittents.

Rich, humid low grounds, which produce ague plants abundantly when they are new, undergo some change by culture and drainage that unfits them for the growth of the *Palumllæ*. As the malarious portions of the country become older, and the low, humid, rich grounds become drained and cultivated, ague districts will become more and more circumscribed, and intermittents proportionally decrease. As long, however, as there remain in such localities pools, ponds, ditches and streams, the beds of which are liable to become more or less dry during the warm summer months, intermittents may be expected to a certainty to prevail.

These sources of the disease, however, may be much lessened by turning the open ditches into blind ones, draining pools, swamps and ponds, and subjecting the soil of their beds to repeated cultivation. By this process intermittents, which now so extensively prevail over a large portion of our richest districts, may be so circumscribed in their limits, as to

be no longer a dreaded accompaniment to the most fertile agricultural sections of our country.

When it is necessary to make excavations during the warm, dry months, in new, rich, humid soil, they (bottoms and sides) with the earth removed, should at the close of each day's work, be plentifully sprinkled over with caustic lime. If this precaution is well attended to, the ague plants will not develop. It is also highly desirable, in making ditches through malarious soil, to keep the bottom, sides and thrown-out earth well sprinkled with lime. As fast as the beds of streams, ditches, pools and ponds, in ague districts, become dry, they should also be well strewn with caustic lime. This is especially desirable in this climate during the months of July, August and September. When new prairie land, or new, humid low ground is being turned up for the first time, and lime can be readily obtained, it will save much sickness by sowing it over with a good top dressing of caustic lime. If one application is not sufficient to check the growth of ague plants entirely, a second should be made. This application will by no means be lost on the soil, as it serves to nutritive acidity, converts resinous matters into soluble soaps, and the soil is thereby rendered more fertile, and produces enough better yields to more than pay for the lime application. If lime cannot be obtained, wood ashes may be used, though their effect will not be as marked or enduring. In selecting camping grounds for armies, or locations for hospitals, new soil and low prairie or other humid grounds, should be avoided as much as possible. Whenever open ditches are made, streets excavated, wells and cellars dug, or new earth thrown up or exposed in any way to the drying influence of the sun and atmosphere of May, June, July, August and September, and especially during the two latter months, if the region is at all malarious, caustic lime should be freely strewn over all such excavations and over the heaps of soil removed.

Influence upon the System of the Pollen and Volatile Principles of Phænogams when inhaled.

The spores and exhalations of cryptogams are not the only bodies in the atmosphere that excite, when inhaled, abnormal and diseased conditions. During the active flowering of phænogams, the air becomes loaded in their vicinity with the pollen of the flowers and volatile principles of the plants. These matters are inhaled in large quantities by breathing the atmosphere containing them. If the plants produce no innocuous or active medicinal principle, the pollen and exhalations, except in particular instances hereafter referred to, have no abnormal influence upon the organism. But if they produce poisonous products, or active medicinal agents, the influence of the pollen and volatile principles inhaled are readily felt. In passing through a field of hops, lettuce, or poppies in flower, a sensation of drowsiness is soon felt, accompanied often by lassitude, and indisposition either to mental or physical action. In passing through a field of stramonium in bloom, or tobacco, similar sensations follow, with nausea, weakness, tired sensations about the eyes, followed by pains in the head, &c. In passing among the plants of conium maculatum in flower, drowsiness, with a stiffness of the eyes, followed by swelling of the orbital tissues, and a dull pain in the eyeballs and forehead, are the results. These symptoms vary much in severity and duration, according to the time the system is under the influence of the deleterious agents, and the quantity inhaled and absorbed by the surface.

In passing among poison ivy (khus vernix) when it is in flower, the effects are often so powerful, especially when the air is damp and during the night, as to produce extensive cedematous swelling and inflammation, resembling erysipelas. The pollen of several species of lobelia excites nausea and giddiness. There are many other plants that possess powerful and poisonous agents, growing in our forests and upon our prairies, the pollen and volatile principles of which, when inhaled, produce marked derangements.

Many exotics of the Green House come also under this head. The flowers of all such plants should be avoided as much as possible. Many of those unpleasant sensations experienced by travelers and explorers in a new country, while passing among luxuriant plants and beautiful flowers, arise from the inhalation of the pollen and volatile principles of this vegetation. No doubt many diseased conditions may have their origin in such exposures.

Dr. Isaac Hays, editor of the American Journal of Medical Sciences, detailed to me, a short time since, some most interesting instances that had fallen under his observation, of the influence of the pollen of the rose, and also several cases of the influence of the pollen and exhalations from the cereals and other phœnogams upon particular persons. The exhalations from certain plants, when not in flower, produce on some persons marked effects. As an instance of this, the poison ivy (khus vernix) may be mentioned as producing violent symptoms of poisoning in certain cases, without even coming in contact with the plant. Such susceptible persons are able to distinguish its presence before they are able to see the plant, by the effect of the air upon them. Some are highly susceptible to ipecac, it producing peculiar symptoms upon them by simply being in the room with it. Calomel will also frequently excite temporary salivation and nausea, in some, by simply handling it.

Numerous other instances might be added to those already briefly referred to, to show the effects, upon either some or all persons, of extremely minute portions of certain bodies when inhaled. It indicates to us the probability that the atmosphere may contain many of those subtle causes of disease which have thus far eluded the search of so many learned and patient inquiries.

In conclusion, I may add that this paper is merely a brief of the investigations in this direction. All the microscopic descriptions, with six plates of illustrations, and many detailed observations and experiments, are omitted on account of not being able to get the engraving done in time for the report.

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ANNUAL REPORT

OF THE

SURGEON GENERAL,

TO THE

GOVERNOR OF THE STATE OF OHIO,

FOR THE YEAR 1866.

COLUMBUS:

L. D. MYERS & BRO., STATE PRINTERS,

1867.

REPORT OF SURGEON GENERAL.

OFFICE OF SURGEON GENERAL OF OHIO,
COLUMBUS, November 15, 1866.

To His Excellency J. D. Cox, Governor of Ohio:

SIR—I have the honor to submit the Report of the Medical Department of State for the year just closed.

The labors of this Department were materially reduced upon the suppression of the rebellion, and the consequent muster out of the volunteer forces. They were still further diminished by the repeal of the militia law of 1864, which relieved the office of all duty connected with the examination and appointment of county medical officers.

Indeed, so materially were the duties of this Bureau diminished by the causes named, that the Legislature at its last session, virtually abolished the office by omitting any appropriation for the salary of the Surgeon General.

But while the duties that chiefly engaged my predecessors have ceased, other duties new and important presented themselves during the past year.

These duties were developed by the necessities of our discharged soldiers, many of whom, on being mustered out of the United States service, were found to be disabled by wounds and chronic disease, and wholly destitute of any means of subsistence.

It was natural that these soldiers should look to the State for relief, and during the past year hundreds of applications were made by them to this office for advice and assistance.

The establishment of a State Soldiers' Home last winter, was a beneficent and necessary provision. To this Home the disabled and destitute soldiers of the State were cordially invited, and in it they are now enjoying all the comforts and attention that a generous and grateful State can bestow upon her brave defenders.

It became the duty of the Surgeon General, under instructions from your Excellency, to aid in the organization of the Home, and to act as Consulting Surgeon to that Institution.

An extensive correspondence had been carried on by this office, with discharged soldiers throughout the State, and with the relatives of deceased soldiers who sought information in regard to the recovery of back

pay, bounty, pensions, &c. The records of the office, and its relation to the different departments of the Government, often enabled me to furnish the evidence necessary to a final settlement of the soldiers' accounts.

I have the honor herewith to transmit a carefully prepared record of the medical officers belonging to Ohio, who served in the armies of the United States from the commencement of the war to the present date. This record would be incomplete if limited to the surgeons and assistant surgeons of regiments who were appointed by the State Executive. The surgeons of volunteers from Ohio, who were commissioned by the President of the United States, and occupied positions of the highest honor and responsibility in the medical staff of the army, are to be regarded as a part of the State's contribution to the great cause, and are therefore included. The whole number of Ohio Surgeons engaged in the war, is 1,177.

Of this number, 287 were regimental Surgeons; 649 were Assistant Surgeons of regiments; 150 were Contract Surgeons; and 46 belonged to the corps of Brigade Surgeons or Surgeons of the United States Volunteers.

Forty-two medical officers lost their lives in the service; some were killed on the battle-field, others died from wounds or disease contracted in the line of duty. This number does not include many surgeons who are known to have died after being honorably discharged on account of ill-health. A list of each of these classes will be found in the Appendix.

Although the Annual Reports of this Department have heretofore been confined to subjects of a strictly military character, there does not appear to be any thing in the nature of the office imposing this restriction; I shall therefore take the liberty of inviting the attention of your Excellency to some matters of vital importance to the health and welfare of the State; and first to the great injury inflicted on society by the license given to ignorant and unworthy men to engage in the practice of medicine. There is no doubt that hundreds of human lives are annually sacrificed in our own State by the malpractice of this class of doctors. The evil is incalculable and increasing, and as it can only be remedied by legislative interposition, I would earnestly recommend the passage of an act to establish a State Board of Medical Examiners, similar in character to the late Army Medical Examining Board.

The eminence accorded to Ohio Surgeons for skill and fidelity in the late war, was not due to any merit in our system of medical education, but to the faithfulness of the Examining Board.

The gentlemen composing this Board were distinguished for integrity, patriotism, and professional ability. Animated by an earnest zeal for the efficiency of the service, they recommended for appointment only those who possessed the requisite qualifications. None but graduates of regular

medical schools were admitted to examination, and yet over eighty per cent. of these were rejected for incompetence. The ignorance betrayed by many of the candidates was deplorable, proving that the diploma of a medical college has ceased to be of any value as evidence of capacity.

If it was the duty of the State, as all concede, to provide competent physicians for the soldiers, it is no less a duty to make similar provision for the citizens; and yet those rejected candidates, with hundreds of others equally incompetent, are now scattered over the State pursuing their fatal trade with criminal recklessness.

However desirable it might be esteemed by many to adopt the rule of the Army Board, which excludes from examination all who had not graduated at a *regular* school of medicine, I would recommend the law herein advocated to be so framed that the examinations shall be open to the graduates of any school, and that a certificate of qualification be issued to any person of good moral character and education who shall pass a satisfactory examination in the various branches of medical science, regardless of the particular system of therapeutics which the candidate may choose to adopt. The measure could meet with no disinterested opposition, its aim being simply to provide the State with an educated and skillful body of physicians.

I desire, through your Excellency, to call the attention of the Legislature to the importance of erecting an Inebriate Asylum for the treatment of those unfortunate victims of intemperance who have lost all control over their appetite for strong drink.

There are thousands of such persons in Ohio, many of whom would gladly accept the benefits of such an institution. The need of it has long been felt by the most enlightened philanthropists and physicians of the age, who agree in the belief that the Asylum method of treatment is the only method that can be relied upon for the cure of the confirmed drunkard. The success of this plan has been abundantly demonstrated at the Binghampton (N. Y.) Inebriate Asylum and in other institutions. I have personal knowledge of several confirmed drunkards, residents of this State, who were cured at the Binghampton Asylum, and, though from one to five years have passed since their discharge from that institution, there is no sign of a relapse.

The benefits to be conferred on society by this institution are inestimable. It will rescue from degradation and ruin hundreds of those who are crowding our prisons, dying in our poor-houses, and perishing in our streets. It will restore happiness to thousands of hearts that are now hourly wrung by the intemperance of some near *relative* or *friend*. When it is remembered that forty-five per cent. of all our insanity, and fifty-eight per cent. of all our idiocy, spring directly or indirectly from inebriety, the duty of erecting Asylums for this class of patients must be manifest to all.

The Ohio State Medical Society, at its last meeting, appointed a select committee to lay before the next Legislature a report expressing their sense of the necessity that exists for an Inebriate Asylum, and memorializing that honorable body to make an appropriation for this object.

There is another important matter which I respectfully present to your consideration. I refer to the necessity of special legislation for the better protection of the State against the ravages of epidemics. It is known that the cholera has been prevailing since last summer in many parts of the country, and, notwithstanding the lateness and low temperature of the season, the published bills of mortality show that it still lingers on our borders, giving rise to serious apprehension of a fresh outbreak on the return of warm weather.

Some months ago your Excellency directed my attention to this subject, with the view of ascertaining, precisely, what legislation, if any, was required to enable the guardians of public health to adopt the necessary precautionary measures against this malignant epidemic. I visited several places where the disease was prevailing, and found the local Boards of Health much embarrassed in their labors for want of power to enforce prompt compliance with their sanitary orders.

The distinguished Health Officer of Cincinnati, Dr. Clendenin, has prepared a Health Bill adapted to the exigency. A transcript of the main features of this bill will be forwarded to you in a few days, with the hope that it will meet your approval and be commended by your Excellency to the favor of the Legislature.

I cannot close this report without requesting your Excellency to call the attention of the Legislature to the necessity of making some suitable provision for the *Incurably Insane* of our State. This unfortunate class may be found in the different county poor-houses, confined generally in dark and loathsome cells, where the eye of the public does not penetrate, and the ear of charity cannot catch the wail of their misery. In many of the poor-houses these creatures may be found in a state of extreme nudity and filthiness, without beds or bedding, or any adequate protection against the cold of winter, and having their food thrown to them as to wild beasts. In all but a few of the county poor-houses it is the practice of the overseers or their assistants to inflict corporal punishment, often beating them in the most cruel manner. I have a carefully prepared report of the management of this class of insane in forty counties, the details of which present a picture of barbarity as shocking as any to be found in the mad-house annals of the last century.

Will not the State authorities provide a charitable institution for these unfortunate sufferers, in which the spirit of kindness and sympathy shall characterize their treatment? The honor of our State demands it—Humanity demands it—Christianity demands it. So sacred and urgent is this

duty, that, until discharged, we, as an enlightened and Christian people, have no right to make public improvements, to raise monuments in honor of the dead, or even to build *costly* temples for the worship of God.

I remain, with high consideration and respect,

Your obedient servant,

C. McDERMONT,

Surgeon Gen'l of Ohio.

A.

The following Medical Officers were Commissioned in the Three Months' Service, 1861:

Regiment.	Surgeons.	Assistant Surgeons.
1st Infantry.....	William L. McMillen.....	Albert Wilson.
2d ".....	Clarke McDermont.....	J. D. Webb.
3d ".....	R. R. McMeans.....	H. H. Seyes.
4th ".....	H. H. McAbee.....	J. Y. Cantwell.
5th ".....	Alfred Ball.....	C. R. Greenlief.
6th ".....	Starling Loving.....	F. W. Ames.
7th ".....	Henry K. Cushing.....	F. Salter.
8th ".....	Benj. Tappan.....	S. Sexton.
9th ".....	Ch. E. Boyle.....	Rudolph Worth.
10th ".....	C. S. Muscraft.....	John B. Rice.
11th ".....	J. F. Gabriel.....	H. Z. Gill.
12th ".....	W. W. Holmes.....	C. H. Swain.
13th ".....	S. D. Turney.....	R. W. Thrift.
14th ".....	E. A. Coons.....	W. C. Daniels.
15th ".....	O. Ferris.....	J. N. Moony.
16th ".....	J. D. Robinson.....	C. E. Denig.
17th ".....	John G. Kyle.....	C. F. Steele.
18th ".....	A. C. Swartzwelder.....	W. H. Day, resigned. T. L. Neal.
19th ".....	B. B. Breashear.....	F. D. Morris.
20th ".....	E. L. Hill.....	C. J. Bellows.
21st ".....	W. M. Eames.....	D. S. Young.
22d ".....	Douglass Gay, resigned. Isaac L. Crane.	Julius R. Schenck.

B.

ROSTER OF SURGEONS AND ASSISTANT SURGEONS—THREE
YEARS' SERVICE.

FIRST REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Oct. 24, 1861	Robert Fletcher	Surgeon ..	Transferred to Medical Staff U. S. Vols.
Feb. 22, 1864	J. Cullen Barr.....	Surgeon ..	Mustered out with regiment.
Aug. 27, 1861	Albert Wilson.....	Asst. Surg.	Promoted to Surg. 113th, Aug. 1, 1863.
Aug. 21, 1862	J. C. Barr.....	"	Promoted to Surgeon.
April 22, 1864	A. J. Brockett.....	"	Must. out by expiration term of service

SECOND REGIMENT O. V. I.

Aug. 27, 1861	D. E. Wade.....	Surgeon ..	Resigned January 23, 1862.
Feb. 28, 1862	B. F. Miller.....	" ..	Must. out Oct. 10, 1864, with regiment.
Aug. 27, 1861	B. F. Miller.....	Asst. Surg.	Promoted to Surgeon.
Feb. 28, 1862	Thomas J. Shannon...	"	Promoted to Surg. 116th, July 26, 1863.
Aug. 22, 1862	W. A. Carmichael.....	"	Must. out Oct. 10, 1864, with regiment.

THIRD REGIMENT O. V. I.

June 12, 1861	R. R. McMeans.....	Surgeon ..	Died October 30, 1862.
Oct. 31, 1862	Wm. L. Peck.....	" ..	Mustered out by expiration of service.
June 12, 1861	H. H. Seyes.....	Asst. Surg.	Promoted to Surg. 15th, July 22, 1862.
July 5, 1862	T. F. Eaton.....	"	Declined to accept commission.
Aug. 21, 1862	F. S. Clason.....	"	Resigned August 25, 1863.
Sept. 8, 1863	D. N. Kinsman.....	"	Declined to accept commission.
Oct. 6, 1863	Wesley H. Race.....	"	Must. out by expiration of term of serv.

FOURTH REGIMENT O. V. I.

April —, 1861	H. H. McAbee.....	Surgeon ..	Killed by railroad accident.
Sept. 16, 1863	F. W. Morrison.....	"	Mustered out at expiration of service.
Aug. 21, 1861	Albert Longwell.....	Asst. Surg.	Resigned October 27, 1862.
July 31, 1862	F. W. Morrison.....	"	Promoted to Surgeon.
Nov. 29, 1862	John B. Laird.....	"	Resigned July, 1863.
Jan. 18, 1864	D. M. Wilson.....	"	Declined commission.
May 17, 1864	Barzelia Gray.....	"	Mustered out July 12, 1865.

FIFTH REGIMENT O. V. I.

June 11, 1861	A. Ball.....	Surgeon ..	Must. out at expira'n of term of service.
Aug. 26, 1864	A. E. Jenner.....	"	" with regiment, July 8, 1865.
Aug. 3, 1862	Curtis J. Bellows.....	Asst. Surg.	Honorably discharged Sept. 10, 1862.
July 4, 1862	Wm. F. Tibbals.....	"	Resigned September 27, 1864.
Feb. 6, 1863	O. G. Field.....	"	" October 15, 1863.
Nov. 7, 1863	J. G. Junkin.....	"	Must. out with regiment July 3, 1865.

SIXTH REGIMENT O. V. I.

June 18, 1861	Starling Loving.....	Surgeon ..	Resigned October 20, 1861.
Oct. 20, 1861	A. H. Stevens.....	"	Must. out at expirat'n of term of service.
June 18, 1861	F. W. Ames.....	Asst. Surg.	Resigned June 12, 1863.
Sept. 6, 1862	S. B. Houts.....	"	Never mustered.
May 6, 1863	W. W. Fountain.....	"	Resigned August 8, 1863.
Aug. 11, 1863	Israel Bedell.....	"	Mustered out June 23, 1864.

Roster of Surgeons and Assistant Surgeons—Continued.

SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 10, 1861	Francis Salter.....	Surgeon ..	Transferred to Medical Staff U. S. Vols.
Dec. 1, 1862	C. J. Bellows.....	"	Mustered out with regiment.
Sept. 9, 1861	Charles E. Denig.....	Asst. Surg.	Resigned November 1, 1862.
Nov. 11, 1862	E. Hitchcock.....	"	Resigned June 2, 1862.
April 14, 1863	John C. Furguson....	"	Dismissed November 23, 1863.
June 30, 1863	A. Belding	"	Declined commission.
July 17, 1863	David Williams.....	"	Must. out at expirat'n of term of service.

EIGHTH REGIMENT O. V. I.

Sept. 7, 1861	Wm. H. Lamme.....	Surgeon ..	Resigned November 26, 1861.
Nov. 27, 1861	Thos. M. Ebright....	"	January 2, 1862.
Mar. 5, 1863	J. L. Brenton.....	"	Must. out at expirat'n of term of service.
July 8, 1861	Samuel Lexton.....	Asst. Surg.	Resigned October 23, 1862.
Aug. 21, 1862	B. F. Culver.....	"	February 19, 1863.
Dec. 30, 1862	Freeman A. Tuttle....	"	March 5, 1864.
Aug. 11, 1863	J. S. Pollock.....	"	Must. out at expirat'n of term of service.

NINTH REGIMENT O. V. I.

May 28, 1861	Charles E. Boyle.....	Surgeon ..	Resigned April 29, 1863.
May 19, 1863	Conrad Solheim.....	"	Must. out with regiment, June 7, 1864.
Oct. 23, 1861	Conrad Solheim.....	Asst. Surg.	Promoted to Surgeon.
Aug. 21, 1862	James Davenport.....	"	Died in service, March 29, 1863.
July 27, 1863	A. M. Beers.....	"	Mustered out with regiment.

TENTH REGIMENT O. V. I.

June 6, 1861	C. S. Muscroft.....	Surgeon ..	Resigned June 9, 1863.
June 23, 1863	Homer C. Shaw.....	"	Must. out with regiment, June 17, 1864.
June 6, 1861	John B. Rice.....	Asst. Surg.	Promoted Surgeon 72d, Nov., 1861.
Nov. 25, 1861	Homer C. Shaw.....	"	Promoted to Surgeon.
Sept. 1, 1862	Frank E. Powers.....	"	Resigned May 8, 1863.
May 8, 1863	Joseph H. Van Deman.	"	May, 1864.

ELEVENTH REGIMENT O. V. I.

July 7, 1861	J. Frank Gabriel.....	Surgeon ..	Resigned September 25, 1862.
Oct. 26, 1862	John McCurdy.....	"	Must. out with regiment, June 24, 1864.
July 7, 1861	Henry C. Gill.....	Asst. Surg.	Resigned July 16, 1862.
July 11, 1862	S. Hudson.....	"	October 1, 1862.
July 9, 1862	A. C. McNutt.....	"	February 8, 1863.
Dec. 2, 1862	N. H. Sidwell.....	"	Must. out with regiment, June 21, 1864.
Aug. 11, 1863	A. B. Hartman.....	"	"

TWELFTH REGIMENT O. V. I.

Nov. 9, 1861	W. W. Holmes.....	Surgeon ..	Transferred to Medical Staff U. S. Vols.
May 1, 1862	Wm. T. Ridenour.....	"	Resigned December 28, 1862.
Dec. 28, 1862	N. F. Graham.....	"	Mustered out July 11, 1864.
Nov. 9, 1861	Wm. T. Ridenour.....	Asst. Surg.	Promoted to Surgeon.
May 1, 1862	James D. Webb.....	"	Resigned December 1, 1862.
July 13, 1862	N. F. Graham.....	"	Promoted to Surgeon.
Dec. 30, 1862	Horace P. Kay.....	"	Mustered out July 11, 1864.
May 5, 1863	Silas T. Buck.....	"	"

Roster of Surgeons and Assistant Surgeons—Continued.

THIRTEENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
June 26, 1862	Samuel D. Turney	Surgeon ..	Transferred to medical staff U. S. V.
May 18, 1863	Allen Jones	"	Mustered out at expiration of service.
Aug. 26, 1862	E. Y. Chase	Asst. Surg.	Resigned Sept. 17, 1862.
Sept. 17, 1862	J. W. Smith	"	Dismissed April 1, 1863.
Dec. 30, 1862	James McCready	"	Mustered out.
June 5, 1863	John K. More	"	" "
May 2, 1865	S. M. Leeds	"	"

FOURTEENTH REGIMENT O. V. I.

Aug. 16, 1861	W. C. Daniels	Surgeon ..	Transferred to Medical Staff U. S. V.
Nov. 7, 1862	Geo. E. Sloat	"	Resigned November 3, 1864
Feb. 23, 1865	E. King Nash	"	Mustered out with reg't July 11, 1865.
Sept. 9, 1861	Geo. E. Sloat	Asst. Surg.	Promoted Surgeon.
Aug. 2, 1862	Chas. M. Eaton	"	Resigned March 4, 1863.
Dec. 30, 1862	Chas. E. Ames	"	Promoted Surgeon 60th O. V. I.
April 6, 1863	E. King Nash	"	Promoted Surgeon.
July 30, 1864	Thos. J. Cronise	"	Declined commission.

FIFTEENTH REGIMENT O. V. I.

Sept. 20, 1861	Orrin Ferris	Surgeon ..	Resigned March 15, 1862.
March 18, 1862	Henry Spillman	"	Died in line of duty.
June 2, 1862	D. S. Hall	"	Resigned July 1, 1862.
July 22, 1862	H. H. Seyes	"	" Sept. 1, 1864.
Sept. 23, 1864	Wm. J. Kelly	"	" October, 1864.
Oct. 14, 1864	Wm. M. Clarke	"	"
Oct. 24, 1861	George Liggett	Asst. Surg.	Resigned July 13, 1862.
July 13, 1862	Wm. J. Kelly	"	Promoted Surgeon.
Aug. 12, 1862	David Welch	"	" " 33d, April 3, 1863.
July 20, 1863	W. M. Clark	"	Promoted Surgeon.
April 3, 1862	J. B. Young	"	"

SIXTEENTH REGIMENT O. V. I.

Sept. 7, 1861	Basil B. Rrashear	Surgeon ..	[31, 1864. Mustered out by expiration of term, Oct.
Nov. 1, 1861	Byron S. Chase	Asst. Surg.	Promoted Surg. U. S. C. reg't May 19, '63
Aug. 2, 1862	Isaac N. Ellsbury	"	[President. Dismissed Oct. 19, '63, by direction of
July 9, 1863	O. Pomeroy	"	Resigned March 22, 1864.
July 13, 1864	John W. Vandervoort	"	[service, Oct. 31, 1864. Mustered out by expiration of term of

SEVENTEENTH REGIMENT O. V. I.

Oct. 2, 1861	W. S. Schenck	Surgeon ..	Resigned — 12, 1862.
Dec. 23, 1862	Henry J. Herrick	"	Mustered out Sept. 26, 1864.
Jan. 22, 1865	J. E. Fowler	"	Resigned May 30, 1865.
June 6, 1865	D. D. Benedict	"	Mustered out with reg't July 16, 1865.
Sept. 28, 1861	E. Sinnett	Asst. Surg.	Resigned Jan. 18, 1862.
Feb. 4, 1862	Henry J. Herrick	"	Promoted Surgeon.
Dec. 30, 1862	D. D. Benedict	"	"

EIGHTEENTH REGIMENT O. V. I.

Sept. 24, 1861	Wm. P. Johnson	Surgeon ..	Mustered out Nov. 1864.
Feb. 20, 1865	Horace P. Kay	"	Mustered out with reg't Oct. 9, 1865.
Sept. 24, 1861	Wm. M. Mills	Asst. Surg.	Resigned.
Aug. 21, 1862	W. Fobes	"	" Oct. 22, 1862.
Jan. 8, 1863	Chas. H. French	"	Mustered out Oct., 1864.
May 10, 1865	A. C. Newell	"	" with reg't Oct. 9, 1865.
May 29, 1865	Samuel C. Baxter	"	" " " "

Roster of Surgeons and Assistant Surgeons—Continued.

NINETEENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Oct. 1, 1862	Fred. T. Hurxthal	Surgeon ..	Resigned April 20, 1863.
March —, 1863	Benj. F. Failor	"	" 1, 1865.
April 10, 1865	A. H. Lowers	"	
Oct. 3, 1861	B. F. Failor	Asst. Surg.	Promoted Surgeon.
July 5, 1861	A. H. Lowers	"	"
April 30, 1863	Robert McNeilly	"	Resigned August 22, 1864.
April 10, 1865	J. H. Biteman	"	Died in Texas September 25, 1865.

TWENTIETH REGIMENT O. V. I.

Sept. 7, 1861	Edward L. Hill	Surgeon ..	Resigned September 18, 1864.
Oct. 3, 1864	H. B. Fricker	"	Mustered out with reg't July 15, 1865.
Sept. 9, 1861	John G. Purple	Asst. Surg.	Died in service May 13, 1862.
May 3, 1862	H. B. Fricker	"	Promoted Surgeon.
Aug. 21, 1862	J. W. Guthrie	"	Mustered out with reg't July 15, 1865.

TWENTY-FIRST REGIMENT O. V. I.

Sept. 19, 1861	Wm. M. Eames	Surgeon ..	Resigned October 3, 1862.
Oct. 3, 1862	Daniel S. Young	"	Mustered out with reg't July 25, 1865.
Sept. 19, 1861	"	Asst. Surg.	Promoted Surgeon.
Aug. 21, 1862	Richard Gray, Jr.	"	Mustered out with reg't July 25, 1865.
Dec. 8, 1862	W. C. Payne	"	Resigned August 13, 1863.
June —, 1865	H. H. Crethers	"	Declined Commission.

TWENTY-SECOND REGIMENT O. V. I.

Aug. 27, 1861	John B. Bell	Surgeon ..	Resigned February 11 1862.
Feb. 19, 1862	H. E. Foote	"	Mustered out with reg't Nov. 3, 1864.
Aug. 27, 1861	A. M. Brown	Asst. Surg.	Promoted Surgeon 68th, Sept. 29, 1864.
Aug. 21, 1862	W. H. Gilmore	"	Resigned May 24, 1863.

TWENTY-THIRD REGIMENT O. V. I.

July " 2, 1861	Jos. T. Webb	Surgeon ..	Mustered out with reg't July 26, 1865.
" " " 2, 1861	John McCurdy	Asst. Surg.	Promoted Surgeon 11th, Oct. 26, 1862.
July 4, 1862	Jos. E. Barrett	"	Promoted Surgeon 194th, Mar. 14, 1865.
April 23, 1864	James McClure	"	Mustered out with reg't July 26, 1865.
May 10, 1865	E. Y. King	"	" " " "

TWENTY-FOURTH REGIMENT O. V. I.

July 2, 1861	David Welsh	Surgeon ..	Resigned July 26, 1861.
July 26, 1861	George R. Weeks	"	Transf'd to Surg. U. S. V., Feb. 19, 1863.
May 30, 1863	J. M. Cooke	"	Mustered out July, 1864.
July 24, 1861	"	Asst. Surg.	Promoted to Surgeon.
Aug. 19, 1862	H. Y. Smith	"	Resigned June 23, 1863.
July 24, 1863	E. M. Howland	"	Mustered out July, 1864.

TWENTY-FIFTH REGIMENT O. V. I.

July 26, 1861	T. G. Myer	Surgeon ..	Resigned 1864.
July 30, 1864	William Walton	"	
July 2, 1861	George R. Weeks	Asst. Surg.	Promoted Surgeon 24th.
Sept. 7, 1861	Lawrence L. Andrews ..	"	Resigned May 22, 1863.
July 13, 1862	William T. Dean	"	Died in service, September 17, 1862.
Oct. 7, 1862	William Walton	"	Promoted Surgeon.
July 30, 1864	E. M. Wilson	"	

Roster of Surgeons and Assistant Surgeons—Continued.
 TWENTY-SIXTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
July 2, 1861.	M. M. Stimmel.....	Surgeon..	Resigned May 14, 1863.
May 11, 1863.	W. B. McGavran....	"	" September, 1864.
Sept. 26, 1864.	David Rush	"	" June, 1865.
July 17, 1865.	Lewis Slusser.....	"	
July 2, 1861.	Andrew Sabine	Asst. Surg.	Promoted Surgeon 76th.
Mar. 11, 1863.	Wm. H. Cretcher ..	"	Resigned May 16, 1863.
Aug. 27, 1862.	D. Richards	"	" February 22, 1863.
Mar. 12, 1863.	W. B. McGavran....	"	Promoted Surgeon.
June 20, 1863.	D. S. Hall	"	Declined commission.
July 20, 1863.	David Rush	"	Promoted Surgeon.
Sept. 28, 1864.	F. W. Inman	"	Declined commission.
Oct. 3, 1864.	James G. Carr	"	

TWENTY-SEVENTH REGIMENT O. V. I.

Aug. 1, 1861.	W. R. Thrall	Surgeon..	Resigned March 12, 1863.
Mar. 12, 1863.	Jacob C. Denise	"	Mustered out November 14, 1864.
Nov. 1, 1864.	Isaac Young.....	"	Mustered out with regiment July 11, 1865.
Aug. 19, 1861.	Jacob C. Denise.....	Asst. Surg.	Promoted Surgeon.
July 24, 1862.	James Sprague	"	Resigned May 25, 1864.
April 16, 1863.	G. W. Garver	"	Declined commission.
May 11, 1863.	Isaac Young.....	"	Promoted Surgeon.
April 11, 1865.	John L. Chapel	"	Mustered out with regiment July 11, 1865.

TWENTY-EIGHTH REGIMENT O. V. I.*

June 10, 1861.	Gerhard Saal	Surgeon...	Transferred to U. S. Vols. [23, 1864.
Feb. 26, 1863.	Charles E. Denig.....	"	Must. out at exp. of term of service, July
June 10, 1861.	Adolph Schenbeim ..	Asst. Surg.	Resigned April, 1863.
May 1, 1863.	George Connell	"	Declined commission. [23, 1864.
June 30, 1863.	A. E. Jenner.....	"	Must. out at exp. of term of service, July
July 4, 1862.	Geo. B. Hackenberg..	"	Resigned Feb. 14, 1863.
July 24, 1863.	Joseph Hebble.....	"	Never mustered.

* TWENTY-NINTH REGIMENT O. V. I.

Aug. 23, 1861.	N. K. Tifield.....	Surgeon..	Resigned August 12, 1864.
Aug. 29, 1864.	E. P. Haines.....	"	Resigned.
July 7, 1865.	Thomas B. Miser....	"	Mustered out with regiment July 13, 1865.
Oct. 13, 1861.	Sylvester Burrowes..	Asst. Surg.	Resigned January 26, 1863.
Aug. 21, 1862.	Cyrus Hosack	"	" August 7, 1863.
Jan. 26, 1863.	E. P. Haines.....	"	Promoted Surgeon.
Aug. 24, 1864.	Thomas B. Miser....	"	" "

THIRTIETH REGIMENT O. V. I.

Aug. 28, 1861.	Henry T. Grier	Surgeon..	Resigned November 12, 1861.
Nov. 19, 1861.	Joseph B. Potter....	"	Mustered out with regiment Aug. 18, 1865
Aug. 30, 1861.	C. B. Richards.....	Assi. Surg.	Resigned to accept staff position.
Aug. 5, 1861.	P. F. Beverly	"	Resigned April 6, 1863.
July 4, 1862.	D. B. Wren	"	Declined commission.
July 20, 1863.	Orange Fisher.....	"	Never mustered.

THIRTY-FIRST REGIMENT O. V. I.

Sept. 13, 1861.	Jason W. Arter	Surgeon..	Mustered out September, 1864.
Oct. 4, 1864.	Elias S. Chapel	"	Mustered out with regiment July 20, 1865
Sept. 5, 1861.	J. L. Mounts	Asst. Surg.	Resigned January 11, 1863.
July 4, 1862.	L. Holland	"	Resigned 1864.
Feb. 4, 1863.	E. S. Chapel	"	Promoted Surgeon.
Mar. 11, 1863.	Royal N. Varney....	"	Mustered out with regiment July 20, 1865

Roster of Surgeons and Assistant Surgeons—Continued.

THIRTY-SECOND REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 21, 1861.	John N. Mowry.....	Surgeon..	Resigned January 22, 1862.
Feb. 13, 1862.	James G. Buchanan..	"	" March 13, 1863.
Jan. 18, 1863.	Alfred H. Brundage..	"	Mustered out August 31, 1864.
Sept. 21, 1864.	Thomas P. Bond	"	" with regiment July 20, 1865.
Aug. 31, 1861.	Alfred H. Brundage..	Asst. Surg.	Promoted Surgeon.
July 4, 1862.	Silas E. Sheldon	"	Dismissed March 13, 1863.
Mar. 11, 1863.	John Morgan	"	Resigned February 19, 1864.
June 12, 1863.	G. S. Guthrie	"	Died in service February 20, 1864.
April 1, 1864.	Thomas P. Bond	"	Promoted Surgeon.
April 30, 1864.	L. A. Grimes.....	"	Dismissed July 23, 1864.
Sept. 7, 1864.	A. J. Patterson	"	Declined commission.
Sept. 20, 1864.	William H. Putt	"	" " "
Oct. 1, 1864.	John A. Soliday.....	"	Died in service March 26, 1865.
June 10, 1865.	C. K. Clarke.....	"	Mustered out with regiment July 20, 1865.

THIRTY-THIRD REGIMENT O. V. I.

July 21, 1861.	F. B. Mussey	Surgeon..	Resigned August 27, 1862.
Feb. 8, 1863.	George W. Brooke	"	Declined commission.
April 3, 1863.	David Welsh	"	Resigned September 21, 1864.
Oct. 3, 1864.	Lyonel J. Smith	"	Mustered out with regiment July 12, 1865.
May 26, 1862.	B. Mosenmier.....	Asst. Surg.	Resigned October 24, 1863.
Aug. 21, 1862.	J. H. Hair	"	" July 30, 1863.
Jan. 4, 1864.	William T. Ropp.....	"	Mustered out with regiment July 12, 1865.

THIRTY-FOURTH REGIMENT O. V. I.

Aug. 27, 1861.	Jacob Y. Cantwell ..	Surgeon..	Transferred to Medical staff U. S. vols.
Jan. 30, 1862.	W. R. S. Clarke.....	"	Resigned July 30, 1862.
Aug. 27, 1862.	John H. Ayres.....	"	Mustered out February 27, 1865.
Aug. 31, 1861.	W. R. S. Clarke	Asst. Surg.	Promoted Surgeon.
Jan. 16, 1862.	John H. Ayres	"	" " "
July 4, 1862.	Wilson V. Cowan....	"	" " "
Aug. 27, 1862.	C. A. Miller	"	Mustered out June 30, 1864.
Mar. 2, 1864.	Richard March	"	Never mustered.
June 8, 1864.	J. P. Shilling	"	Mustered out February 22, 1865.

THIRTY-FIFTH REGIMENT O. V. I.

Sept. 7, 1861.	P. A. Gordon	Surgeon..	Resigned November 17, 1862.
Oct. 8, 1863.	F. D. Morris	"	Died September 23, 1864.
Oct. 3, 1864.	Charles O. Wright ..	"	Resigned June 18, 1864.
Aug. 21, 1861.	Francis D. Morris....	Asst. Surg.	" August 7, 1862.
Aug. 19, 1862.	Charles O. Wright ..	"	Promoted to Surgeon.
Nov. 13, 1862.	Charles H. Landis ..	"	Mustered out April 30, 1864.
July 24, 1863.	Michael Hawes	"	Never mustered.

THIRTY-SIXTH REGIMENT O. V. I.

Aug. 26, 1861.	R. N. Barr.....	Surgeon..	Resigned February 26, 1862.
Mar. 8, 1862.	J. H. Whilford	"	Mustered out with regiment July 27, 1865.
Aug. 23, 1861.	J. H. Whilford.....	Asst. Surg.	Promoted Surgeon.
Mar. 8, 1862.	Colin McKenzie.....	"	Resigned May 19, 1863.
July 4, 1862.	John Dickerson	"	Promoted Surgeon 195th.
July 24, 1863.	John P. Welsh.....	"	Resigned September 18, 1864.
April —, 1865.	B. F. Holcomb.....	"	Mustered out with regiment July 27, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

THIRTY-SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Oct. 3, 1861	Conrad Schenck.....	Surgeon ..	Resigned Feb. 26, 1862.
Feb. 26, 1862	Julius C. Schenck.....	"	" Nov. 20, 1862.
Feb. 26, 1863	A. C. Swartzwelder...	"	Transferred Asst. Surg. U. S. V.
June 6, 1863	Wm. Arnold.....	"	Mustered out.
Oct. 5, 1863	Aug. Weidenbach.....	"	"
April 23, 1864	Fred. Hohly.....	"	Mustered out with regiment.
Sept. 7, 1861	J. C. Schenck.....	Asst. Surg.	Promoted Surgeon.
July 4, 1862	Louis Gessner.....	"	Resigned Jan. 1, 1863.
Dec. 5, 1862	Eugene Ringler.....	"	Promoted Surgeon 106th.
Jan. 31, 1863	A. W. Billhardt.....	"	Resigned Oct. 13, 1864.

THIRTY-EIGHTH REGIMENT O. V. I.

June 10, 1861	Israel Coons.....	Surgeon ..	Resigned July 13, 1863.
Aug. 20, 1863	James Haller.....	"	Mustered out Jan. 4, 1865.
Jan. 20, 1865	H. B. Powell.....	"	Must. out with regiment July 12, 1865.
June 10, 1861	James Haller.....	Asst. Surg.	Promoted Surgeon.
Aug. 21, 1862	W. K. Hughes.....	"	Resigned.
July 14, 1861	H. B. Powell.....	"	Promoted Surgeon.
May 8, 1864	T. D. Brooks.....	"	Honorably discharged April 13, 1865.

THIRTY-NINTH REGIMENT O. V. I.

Aug. 20, 1861	O. W. Nixon.....	Surgeon ..	Resigned May 31, 1862.
June 17, 1862	Thos. W. McArthur...	"	" Sept. 3, 1862.
Sept. 9, 1862	John A. Follett.....	"	Mustered out with regt. July 9, 1865.
May 31, 1861	Thos. W. McArthur...	Asst. Surg.	Promoted Surgeon.
Sept. 3, 1862	Christian Forster.....	"	Promoted Surgeon 58th.
Aug. 19, 1862	John A. Follett.....	"	Promoted Surgeon.
Sept. 5, 1862	Lyonel J. Smith	"	Promoted Surgeon 33d O. V. I.
Dec. 13, 1862	Pierre S. Starr.....	"	Mustered out with regt. July 9, 1865.
April 9, 1865	W. J. Andrews.....	"	" " "

FORTIETH REGIMENT O. V. I.

Sept. 7, 1861	Alex. McBride.....	Surgeon ..	Resigned March 26, 1862.
April 1, 1862	John N. Beach.....	"	Mustered out with regiment.
Oct. 3, 1861	Joseph C. Kalb	Asst. Surg.	Resigned Jan. 6, 1863.
Ang. 21, 1862	A. E. Isaminger.....	"	Mustered out with regiment.
Feb. 8, 1862	W. H. Matchett.....	"	Mustered out.

FORTY-FIRST REGIMENT O. V. I.

Aug. 29, 1861	Thos. G. Cleveland...	Surgeon ..	Resigned May 17, 1862.
May 12, 1862	John C. Hubbard.....	"	" Aug. 30, 1862.
Aug. 30, 1862	Albert G. Hart.....	"	" Nov., 1864.
Sept. 12, 1862	B. H. Cheney.....	Asst Surg.	" Aug. 22, 1864.
Sept. 5, 1861	Albert G. Hart.....	"	Promoted Surgeon.
Sept. 8, 1862	W. C. Catlin.....	"	Resigned Feb. 18, 1863.
Mar. 11, 1863	John W. Bugh.....	"	Dismissed.
Aug. 27, 1864	C. E. Tupper.....	"	"

Roster of Surgeons and Assistant Surgeons—Continued.

FORTY-SECOND REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 7, 1861	Joel Pomerine.....	Surgeon ..	Resigned July 26, 1863.
Oct. 23, 1863	J. C. Kalb.....	"	" Aug. 29, 1864.
Oct. 3, 1861	Jos. W. Harmon	Asst. Surg.	" Nov. 9, 1862.
Feb. 23, 1863	J. C. Kalb.....	"	Promoted Surgeon.
Aug. 26, 1862	J. N. Miner.....	"	Died, December 13, 1862.
Mar. —, 1862	John W. Driscoll.....	"	Resigned July 1, 1863.
Nov. 10, 1863	H. E. Warner.....	"	Declined commission.
Jan. 6, 1864	H. McFadden.....	"	Must. out with regiment Dec. 2, 1864.

FORTY-THIRD REGIMENT O. V. I.

Sept. 11, 1861	Clark McDermont....	Surgeon ..	Transferred to Med. Staff U. S. Vols.
Dec. 4, 1861	F. M. Rose.....	"	Must. out with regiment July 13, 1865.
April 14, 1862	F. M. Rose.....	Asst. Surg.	Promoted Surgeon.
June 20, 1862	Wm. S. Bell	"	Resigned March 29, 1864.
Sept. 5, 1862	C. Morrow	"	" "
June 6, 1864	Charles E. Poe.....	"	Must. out with regiment July 13, 1865.
Mar. 10, 1865	Wesley Anderson.....	"	" " "

FORTY-FOURTH REGIMENT O. V. I.

Sept. 23, 1861	H. K. Steele	Surgeon ..	Mustered out Sept. 30, 1864.
Nov. 1, 1864	M. J. Bowland.....	"	Transferred to 8th O. V. C.
Sept. 23, 1861	John H. Rodgers.....	Asst. Surg.	Promoted Surgeon 104th.
July 4, 1862	Douglass Luce.....	"	Mustered out.
Mar. 11, 1863	B. F. Davis.....	"	Transferred to 8th O. V. C.
May 10, 1864	M. J. Bowland.....	"	Promoted Surgeon.

FORTY-FIFTH REGIMENT O. V. I.

July 22, 1862	Thos. H. Reamy	Surgeon ..	Must. out with regiment June 12, 1865.
Aug. 15, 1862	Julius J. Sheldon	Asst. Surg.	Mustered out Nov. 6, 1864.
Mar. 11, 1863	Robert J. Hill	"	Must. out with regiment June 12, 1865.
July 7, 1862	Henry Besse.....	"	Resigned Nov. 20, 1862.

FORTY-SIXTH REGIMENT O. V. I.

Sept. 11, 1861	James O. Robinson...	Surgeon ..	Resigned Oct. 21, 1861.
Nov. 11, 1861	Thos. W. McFadden..	"	Honorably discharged Aug. 9, 1862.
Aug. 26, 1862	W. W. Bridge	"	Died in the service, Aug. 6, 1864.
Sept. 19, 1864	D. P. Smedley	"	Honorably discharged Dec. 29, 1864.
Jan. 17, 1865	Davis Haldeman.....	"	Must. out with regiment July 22, 1865.
Oct. 19, 1861	Greenleaf C. Norton ..	Asst. Surg.	Died in service Aug. 10, 1862.
Oct. 4, 1862	D. P. Smedley	"	Promoted Surgeon.
Mar. 11, 1863	Davis Haldeman.....	"	" "
Feb. 17, 1865	C. J. Hagan	"	Must. out with regiment July 22, 1865.

FORTY-SEVENTH REGIMENT O. V. I.

Aug. 27, 1861	George A. Spies.....	Surgeon ..	Resigned April 14, 1862.
April 18, 1862	Stephen P. Bonner....	"	Mustered out Dec. 24, 1864.
Aug. 27, 1861	Augustus Holtage	Asst. Surg.	Resigned Jan. 13, 1863.
Feb. 4, 1862	Augustus C. Barlow..	"	" Nov. 29, 1862.
Dec. 30, 1862	Andrew Davidson....	"	" July 26, 1863.
Mar. 11, 1863	Jacob Huber.....	"	Promoted Surgeon July 15, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

FORTY-EIGHTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 27, 1861	Milton T. Carey.....	Surgeon ..	Resigned March 11, 1863.
Mar. 1, 1863	Plyn A. Willis.....	"	Mustered out with regiment.
Oct. 11, 1861	Aaron T. Johnson....	Asst. Surg.	Resigned March 8, 1863.
Aug. 19, 1862	J. K. Lewis.....	"	Died Oct. 11, 1862.
Oct. 15, 1862	Plyn A. Willis.....	"	Promoted Surgeon.
April 4, 1863	C. Hamer Wiles	"	Transferred to 83d O. V. I.
April 16, 1863	Wm. Watt.....	"	Resigned.

FORTY-NINTH REGIMENT O. V. I.

Aug. 17, 1861	Robt. W. Thrift.....	Surgeon ..	Resigned 1864.
Sept. 24, 1864	Wm. H. Park.....	"	
Aug. 17, 1861	Wm. H. Park.....	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	H. B. Lung.....	"	Resigned April 27, 1864.
May 10, 1864	S. A. Smith.....	"	Declined commission.
Aug. 19, 1864	Samuel H. Spencer...	"	

FIFTIETH REGIMENT O. V. I.

July 9, 1862	Ceo. Keifer.....	Surgeon ..	Resigned Dec. 26, 1863.
Dec. 24, 1863	Samuel K. Crawford..	"	Mustered out Dec. 31, 1864.
Dec. 31, 1864	Jas. T. Wood	"	Must. out 161st regiment June 26, 1865.
July 9, 1862	Samuel K. Crawford..	Asst. Surg.	Promoted Surgeon.
Aug. 22, 1862	Nahemiah Cole.....	"	Resigned April, 1865.
Dec. 31, 1864	Geo. Sadler.....	"	Must. out with regt. June 26, 1865.

FIFTY-FIRST REGIMENT O. V. I.

Oct. 3, 1861	M. C. Woodworth.....	Surgeon ..	Transferred Surgeon U. S. V.
June 25, 1864	E. D. W. C. Wing.....	"	
Sept. 28, 1861	Martin Hagan.....	Asst. Surg.	Resigned Nov. 26, 1862.
Oct. 28, 1862	G. W. Mitchell.....	"	Declined commission.
Nov. 5, 1862	E. D. W. C. Wing.....	"	Promoted Surgeon.
Mar. 11, 1863	R. P. Jennings.....	"	
May 10, 1865	L. E. Weagley.....	"	

FIFTY-SECOND REGIMENT O. V. I.

April 26, 1862	Joel Moore.....	Surgeon ..	Resigned May 9, 1863.
May 9, 1863	Henry M. Duff.....	"	" Sept. 7, 1864.
Oct. 28, 1864	N. S. Hill.....	"	Mustered out with regt. June 3, 1865.
July 7, 1862	Henry M. Duff.....	Asst. Surg.	Promoted Surgeon.
Sept. 5, 1862	A. J. Rosa	"	Died February 20, 1864.
July 10, 1863	D. Ridenour.....	"	Never mustered.
May 19, 1864	S. A. Simpson.....	"	Mustered out with regt. June 3, 1865.

FIFTY-THIRD REGIMENT O. V. I.

Oct. 3, 1861	Wm. M. Cake.....	Surgeon ..	Resigned Sept. 20, 1864.
Nov. 17, 1864	John A. Lair	"	Mustered out with Regt. Aug. 11, 1865.
Oct. 3, 1861	James P. Ring.....	Asst. Surg.	Resigned Aug. 31, 1862.
Aug. 19, 1862	John A. Lair	"	Promoted Surgeon.
Sept. 17, 1863	R. L. Vanhaslingen ...	"	Promoted Surgeon.
Nov. 17, 1864	Samuel Mathers.....	"	Died in service May 23, 1865
June 15, 1865	W. F. Hani.....	"	Mustered out with regt. Aug. 11, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

FIFTY-FOURTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 27, 1861	C. P. Brent.....	Surgeon ..	Resigned Jan. 30, 1865.
Feb. 10, 1865	James Baggs.....	"	Must. out with regiment Aug. 15, 1865.
Oct. 9, 1861	Thomas L. Harper....	Asst. Surg.	Resigned Aug. 1, 1863.
Aug. 28, 1862	James Baggs.....	"	Promoted Surgeon.
April 10, 1865	D. H. Cowan.....	"	Declined to muster.

FIFTY-FIFTH REGIMENT O. V. I.

Oct. 3, 1861	Jay Kling.....	Surgeon ..	Mustered out.
Nov. 1, 1864	Joseph Hibble.....	"	Must. out with regiment July 11, 1865.
Oct. 3, 1861	Henry K. Spooner....	Asst. Surg.	Promoted Surgeon 98th.
July 4, 1862	J. L. Morris	"	Never mustered.
Feb. 24, 1864	Joseph Hibble.....	"	Promoted Surgeon.
Jan. 25, 1864	James C. Myers.....	"	Must. out with regiment July 11, 1865.

FIFTY-SIXTH REGIMENT O. V. I.

Oct. 3, 1861	W. N. King.....	Surgeon ..	Resigned August 23, 1863.
	David Williams.....	"	Mustered out November 25, 1864.
Dec. 14, 1864	P. M. McFarland.....	"	
Oct. 3, 1861	W. C. Payne.....	Asst. Surg.	Resigned April 8, 1862.
April 1, 1862	N. H. Fisher.....	"	Died January 25, 1863.
April 1, 1863	Jacob W. Knouff.....	"	Declined commission.
Aug. 21, 1862	P. M. McFarland.....	"	Promoted Surgeon.
July 24, 1863	J. S. Pollock.....	"	Declined commission.

FIFTY-SEVENTH REGIMENT O. V. I.

Oct. 3, 1861	John P. Haggett.....	Surgeon ..	Died in service April 3, 1862.
May 26, 1862	Wm. D. Carlin.....	"	" " December 26, 1862.
April 23, 1862	A. C. Messenger.....	"	Mustered out December 3, 1864.
Dec. 14, 1864	Robert H. Millikan...	"	Mustered out with regt. Aug. 14, 1865.
Nov. 14, 1861	Lafayette Woodruff...	Asst. Surg.	Resigned April 23, 1862.
Oct. 3, 1861	A. C. Messenger.....	"	Promoted Surgeon.
Oct. 11, 1862	J. C. Maris	"	Declined commission.
April, 1863	R. P. Johnson.....	"	" " "
May 7, 1863	Jacob W. Knouff.....	"	Resigned April 5, 1864.
July 24, 1863	S. D. Steer.....	"	Never mustered.
May 10, 1864	Robert H. Millikan ...	"	Promoted Surgeon.
April 22, 1865	G. M. Frazer.....	"	Must. out with regiment Aug. 14, 1865.

FIFTY-EIGHTH REGIMENT O. V. I.

Oct. 7, 1861	Rainer Shallem.....	Surgeon ..	Resigned April 6, 1862.
Nov. 18, 1862	Christian Forester....	"	Must. out by expira'n of term of service.
Jan. 9, 1862	Eugene Ringler.....	Asst. Surg.	Transferred to 37th, April 30, 1862.
Oct. 25, 1862	A. McElwee.....	"	Resigned December 8, 1862.
Dec. 23, 1862	Eli Dayton.....	"	Mustered out January 14, 1865.
Aug. 21, 1862	Bruno Lankriet.....	"	Died Oct. 27, 1862.

FIFTY-NINTH REGIMENT O. V. I.

Oct. 27, 1861	Abram C. McChesney..	Surgeon ..	Mustered out October 9, 1864.
Nov. 6, 1861	Charles F. Wilbur....	Asst. Surg.	Resigned June 22, 1862.
July 4, 1862	Fred. Swingley.....	"	Resigned November 26, 1862.
Aug. 25, 1862	S. C. Gordon.....	"	Mustered out October 9, 1864.
Feb. 20, 1863	N. J. Barber.....	"	" " "

Roster of Surgeons and Assistant Surgeons—Continued.

SIXTIETH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 23, 1861	David Noble	Surgeon ..	Mustered out.
Oct. —, 1864	Nath. H. Richardson ..	"	Resigned.
Jan. 9, 1862	R. A. Dwyer	Ass't Surg.	Resigned May 7, 1862.
May 3, 1862	Henry T. Grier	"	Mustered out.
April 20, 1864	John M. Evans	"	Honorably discharged February, 1865.
May 2, 1865	Jas. F. Thompson	"	Mustered out with reg't July 23, 1865.
April 18, 1864	Chas. E. Ames	Surgeon ..	" " "

SIXTY-FIRST REGIMENT O. V. I.

Oct. 5, 1861	Enoch Pearce	Surgeon ..	Transferred to U. S. V. Staff.
Nov. 1, 1863	H. K. Spooner	"	Mustered out March 31, 1865.
Oct. 16, 1861	Wm. S. More	Ass't Surg.	Killed at battle of Gettysburg.
Aug. 16, 1862	J. J. Cowlan	"	Honorably discharged September 14, '63.
Nov. 16, 1863	L. P. Culver	"	Promoted Surgeon 82d O. V. I.

SIXTY-SECOND REGIMENT O. V. I.

Oct. 23, 1861	Chas. H. Hood	Surgeon ..	Resigned January 27, 1863.
Feb. 10, 1863	Augustus C. Barlow ..	"	" August 23, 1865.
Nov. 25, 1861	Thos. J. Haines	Ass't Surg.	" September 17, 1862.
Aug. 26, 1862	Wm. I. Wolfley	"	" June 2, 1864.
Aug. 27, 1862	John Truman	"	" " 26, 1863.
Feb. 27, 1864	John A. Saylor	"	Transferred to 61st reg't Sept. 1, 1865.

SIXTY-THIRD REGIMENT O. V. I.

Oct. 7, 1861	Isaac L. Crane	Surgeon ..	Resigned January 28, 1863.
Jan. 28, 1863	Arthur B. Monahan ..	"	Mustered out with reg't July 8, 1865.
Oct. 7, 1861	" "	Ass't Surg.	Promoted Surgeon.
Aug. 21, 1862	J. O. Marsh	"	Resigned October 27, 1862.
Mar. 11, 1863	John B. McDill	"	" June 2, 1865.
Aug. 4, 1863	John C. Bigham	"	Declined commission.

SIXTY-FOURTH REGIMENT O. V. I.

Oct. 3, 1861	Henry O. Mack	Surgeon ..	Resigned August 2, 1862.
Aug. 2, 1862	Abram McMahon	"	Transferred to U. S. V. Staff.
July 25, 1864	Hugh P. Anderson	"	"
Nov. 7, 1861	" "	Ass't Surg.	Promoted Surgeon.
Aug. 21, 1862	V. G. Miller	"	Resigned May 26, 1863.
June 30, 1863	A. Potter	"	" November 9, 1863.
July 25, 1864	Moses H. Quinn	"	"

SIXTY-FIFTH REGIMENT O. V. I.

Oct. 3, 1861	John G. Kyle	Surgeon ..	Resigned September 8, 1862.
Oct. 7, 1862	I. M. Todd	"	Resigned.
Jan. —, 1864	J. M. Cruthers	"	"
Nov. 14, 1861	John C. Gill	Ass't Surg.	Resigned June 24, 1862.
Aug. 21, 1862	W. M. McCully	"	Promoted Surgeon U. S. C. regiment.
Oct. 7, 1862	W. S. Patterson	"	Resigned.
July 13, 1864	C. J. Hagan	"	Declined commission.
Sept. 21, 1864	J. A. Dickson	"	" "
Feb. 15, 1865	W. E. Patterson	"	Resigned October 20, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

SIXTY-SIXTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 26, 1861	Thos. P. Bond	Surgeon ..	Resigned September 12, 1862.
Sept. 13, 1862	J. W. Brooks	"	Mustered out with reg't July 15, 1865.
Nov. 5, 1861	" "	Ass't Surg.	Promoted Surgeon.
Mar. 13, 1863	B. F. Ludlam	"	Mustered out with reg't July 15, 1865.

SIXTY-SEVENTH REGIMENT O. V. I.

Oct. 10, 1861	Samuel F. Forbes.....	Surgeon ..	Resigned October 7, 1863.
Oct. 7, 1863	James Westfall	"	
Jan. 9, 1862	" "	Ass't Surg.	Promoted Surgeon.
Aug. 21, 1862	C. Coxton	"	Resigned March 7, 1863.
May 9, 1863	J. H. Van Deman	"	Never mustered.
Nov. 3, 1863	A. S. Combs	"	

SIXTY-EIGHTH REGIMENT O. V. I.

Nov. 6, 1861	Eugene B. Harrison...	Surgeon ..	Honorably discharged.
Sept. 26, 1864	M. A. Brown... ..	"	Mustered out.
Oct. 21, 1861	B. F. Berkley	Ass't Surg.	Resigned December 31, 1862.
Feb. 11, 1863	D. C. Rathburne.....	"	Declined commission.
Aug. 19, 1862	S. C. Chase	"	Resigned October 31, 1862.
April 23, 1863	W. C. Catlin	"	Declined commission.
July 20, 1863	Wm. Massie	"	Resigned August 20, 1864.
July 13, 1864	L. B. Vorhees	"	Declined commission.
Oct. 25, 1864	E. C. De Forrest.....	"	" "
Dec. 8, 1864	John G. Bigham	Surgeon ..	Mustered out with reg't July 10, 1865.

SIXTY-NINTH REGIMENT O. V. I.

Feb. 12, 1862	Lewis Slusser	Surgeon ..	Mus. out by expir'n of time, Apr. 10, '65
April 22, 1865	R. A. Stephenson	"	Mustered out with reg't July 17, 1865.
Oct. 3, 1861	Moses B. Haines	Ass't Surg.	Resigned September 14, 1862.
Aug. 15, 1862	M. A. Frost	"	April 25, 1863.
Dec. 18, 1862	Jas. M. Kuhn	"	Declined commission.
April 4, 1863	R. A. Stephenson.....	"	Promoted Surgeon.

SEVENTIETH REGIMENT O. V. I.

Oct. 24, 1861	C. H. Swain	Surgeon ..	Resigned August 1, 1863.
Aug. 1, 1863	R. L. Van Harlinger ..	"	Mustered out with reg't August 14, 1865
Dec. 11, 1861	T. G. Farrell	Ass't Surg.	Mus. out exp'n term of serv. Dec. 10, '64
Sept. 17, 1862	F. Jaeger	"	Resigned January 24, 1864.
June 7, 1864	I. M. Shoemaker	"	

SEVENTY-FIRST REGIMENT O. V. I.

Oct. 23, 1861	C. M. Hoagland	Surgeon ..	Mustered out with regiment.
Nov. 10, 1863	" "	"	" " "
Jan. 9, 1862	Wm. M. Crain	Ass't Surg.	" " "
Sept. 7, 1862	S. R. Wakefield.....	"	" " "

Roster of Surgeons and Assistant Surgeons—Continued.

SEVENTY-SECOND REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Nov. 25, 1861	J. B. Rice	Surgeon ..	Resigned 1864
Jan. 31, 1865	C. B. Richards	"	Declined commission.
June 5, 1865	W. S. Gaines	"	Never mustered.
Nov. 6, 1861	Wm. M. Kaull	Asst. Surg.	Resigned June 4, 1863.
Aug. 21, 1862	J. W. Goodson	"	Dismissed for absence.
April 1, 1863	Wm. Caldwell	"	Honorably discharged January 4, 1864.
Jan. 31, 1865	Jacob Stamp	"	Declined commission.
Mar. 10, 1865	W. W. Fountain	"	" "
April 10, 1865	F. F. Falk	"	" "

SEVENTY-THIRD REGIMENT O. V. I.

Oct. 20, 1861	Jonas P. Safford	Surgeon ..	Resigned February 18, 1863.
Jan. 1, 1863	Isaac N. Himes	"	Mustered out January 18, 1865.
Feb. 1, 1865	John C. Preston	"	Mustered out with reg't July 20, 1865.
Oct. 20, 1861	Isaac N. Himes	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	James Ligafoos	"	Resigned October 24, 1862.
Mar. 18, 1863	Wm. Richeson	"	Resigned June 27, 1864.
Mar. 19, 1863	J. C. Preston	"	Promoted Surgeon.
Feb. 1, 1865	S. D. Steer	"	Mustered out with reg't July 20, 1865.

SEVENTY-FOURTH REGIMENT O. V. I.

Nov. 5, 1861	J. R. Brelsford	Surgeon ..	Resigned November 8, 1864.
Dec. 5, 1864	M. M. Dickson	"	Mustered out with reg't July 10, 1865.
Jan. 9, 1862	E. W. Steele	Asst. Surg.	Resigned June 4, 1862.
June 17, 1862	William Arnold	"	Promoted Surgeon 37th.
July 4, 1862	A. L. Williams	"	Dismissed.
Dec. 23, 1862	M. M. Dickson	"	Promoted Surgeon.
June 8, 1865	C. A. Moore	"	Mustered out with reg't July 10, 1865.

SEVENTY-FIFTH REGIMENT O. V. I.

Jan. 11, 1862	Samuel Hart	Surgeon ..	Transferred to U. S. V. Staff.
May 15, 1863	Charles L. Wilson	"	Resigned October 2, 1863.
Nov. 23, 1863	John Ingram	"	Mustered out with Reg't Jan. 17, 1865.
Dec. 23, 1861	Charles L. Wilson	Asst. Surg.	Promoted Surgeon.
July 4, 1862	H. W. Owen	"	Resigned November 23, 1862.
Nov. 15, 1862	John Hill	"	Resigned May 26, 1863.
June 29, 1863	D. B. Wren	"	Resigned July 26, 1864.
Aug. 25, 1864	John A. Jamme	"	

SEVENTY-SIXTH REGIMENT O. V. I.

Jan. 9, 1862	Charles R. Pierce	Surgeon ..	Died January 29, 1863.
Feb. 16, 1863	Andrew Sabine	"	Mustered out with Reg't July 15, 1865.
Nov. 6, 1861	Thomas B. Hood	Asst. Surg.	Resigned January 26, 1863.
Dec. 23, 1862	George E. Smith	"	Resigned January 4, 1863.
Aug. 21, 1862	Robert P Muenschor ..	"	Died October 2, 1863.
Feb. 16, 1863	S. C. Mendenhall	"	Mustered out with Reg't July 15, 1865.
June 20, 1863	R. E. Foote	"	Never mustered.

SEVENTY-SEVENTH REGIMENT O. V. I.

Oct. 23, 1861	James W. Warfield	Surgeon ..	Resigned August, 1864.
Aug. 10, 1864	Andrew Wall	"	
Oct. 23, 1861	Pardon Cook	Asst. Surg.	Died September 23, 1863.
Sept. 8, 1862	Andrew Wall	"	Promoted Surgeon.
Sept. 3, 1864	M. Valentine	"	Declined commission.

Roster of Surgeons and Assistant Surgeons—Continued.

SEVENTY-EIGHTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Nov. 2, 1861	Samuel J. Reeves.....	Surgeon ..	Mustered out with Reg't July 11, 1865.
Nov. 26, 1861	S. C. Mendenhall	Asst. Surg.	Resigned April 20, 1862.
April 20, 1862	W. Morrow Beach	"	Promoted Surgeon 118th.
Aug. 26, 1862	J. D. Wortman.....	"	Resigned February 14, 1863.
Aug. 11, 1863	E. C. DeForest.....	"	Never mustered.
May 25, 1864	George C. Peckam	"	Mustered out with Reg't July 11, 1865.
May 31, 1865	R. D. Webb	"	" " " "

SEVENTY-NINTH REGIMENT O. V. I.

Aug. 19, 1862	W. P. Elstun	Surgeon ..	Resigned February 5, 1863.
Feb. 5, 1863	H. A. Langdon.....	"	Mustered out with Reg't June 9, 1865.
Aug. 15, 1862	H. A. Langdon.....	Asst. Surg.	Promoted Surgeon.
July 28, 1862	A. M. Johnson.....	"	Declined commission.
Aug. 25, 1862	W. A. Swander	"	Resigned December 26, 1863.
May 7, 1863	John E. Jones	"	Mustered out with Reg't June 9, 1865.

EIGHTIETH REGIMENT O. V. I.

Jan. 8, 1862	Ezekiel P. Buell.....	Surgeon ..	Mustered out January 7, 1865.
Jan. —, 1865	C. W. Buvinger.....	"	Mustered out with Reg't Aug. 13, 1865.
Jan. 8, 1862	Samuel H. Lee.....	Asst. Surg.	Resigned April 3, 1862.
Aug. 21, 1862	G. Bamback.....	"	Resigned July 26, 1863.
Oct. 9, 1863	E. Y. Clark.....	"	Declined commission.
May 12, 1863	C. W. Buvinger.....	"	Promoted Surgeon.
April 3, 1865	Thomas B. Eagle.....	"	Declined commission.
July 11, 1865	H. G. Topee.....	"	Mustered out with Reg't Aug. 13, 1865.

EIGHTY-FIRST REGIMENT O. V. I.

Nov. 27, 1861	W. H. Lamme.....	Surgeon ..	Resigned March 31, 1862.
April 1, 1862	R. G. McClean.....	"	Resigned November 6, 1862.
Dec. 23, 1862	W. C. Jacobs.....	"	Mustered out with Reg't July 13, 1865.
June 2, 1862	C. R. Reed.....	Asst. Surg.	Resigned October, 1862.
Aug. 19, 1862	J. Whittaker.....	"	Mustered out with Reg't July 13, 1865.
Mar. 11, 1863	H. M. Shaffer.....	"	Mustered out August 24, 1864.

EIGHTY-SECOND REGIMENT O. V. I.

Jan. 1, 1862	J. Y. Cantwell.....	Surgeon ..	Transferred to U. S. V. Staff.
April 27, 1864	C. W. Myers.....	"	Resigned June, 1865.
June 13, 1865	L. P. Culver.....	"	Mustered out July 24, 1865.
Dec. 26, 1861	A. W. Munson	Asst. Surg.	Resigned April 4, 1863.
July 4, 1862	C. W. Myers	"	Promoted Surgeon.
July 24, 1863	L. P. Culver.....	"	" " "
April 27, 1864	W. B. Hedges.....	"	Mustered out July 24, 1865.

EIGHTY-THIRD REGIMENT O. V. I. *

Aug. 19, 1862	John S. McGrew.....	Surgeon ..	Transferred to U. S. V. Staff.
Aug. 21, 1864	George Cassidy.....	"	Transferred Surgeon 182d O. V. I.
Jan. 18 1865	Plyn A. Willis.....	"	Mustered out with Reg't July 24, 1865.
Aug. 19, 1862	Marion Wilkerson....	Asst. Surg.	Resigned August 31, 1863.
Sept. 10, 1862	George Cassidy.....	"	Promoted Surgeon.
Jan. 18, 1865	C. Hamer Wiles.....	"	Mustered out with Reg't July 24, 1865.

* 'Three months' regiment.

Roster of Surgeons and Assistant Surgeons—Continued.

EIGHTY-FOURTH REGIMENT O. V. I.*

Date.	Name.	Rank.	Remarks.
June 10, 1862	Benj. B. Leonard ...	Surgeon ..	Mustered out with reg't, Sept. 20, 1862.
June 11, 1862	Jas. W. Thompson..	Asst. Surg.	" " " " " "

EIGHTY-FIFTH REGIMENT O. V. I.*

June 10, 1862	L. C. Brown.....	Surgeon ..	Mustered out with regiment. Since died;
"	John E. Darby	Asst. Surg.	" " Sept. 23, 1862.

EIGHTY-SIXTH REGIMENT O. V. I.*

June 13, 1862	John N. Mowry.....	Surgeon ..	Mustered out with regiment.
June 17, 1862	John Hill	Asst Surg.	" " "

EIGHTY-SIXTH REGIMENT O. V. I.†

July 9, 1863	W. R. S. Clark.....	Surgeon ..	Mustered out with regiment.
July 3, 1863	W. C. Catlin	Asst. Surg.	Resigned September 17, 1863.
Sept. 18, 1863	W. B. Hedges.....	"	" " "

EIGHTY-SEVENTH REGIMENT O. V. I.*

June 23, 1862	Robt. N. Barr.....	Surgeon ..	Mustered out with regiment.
June 7, 1862	Orlando C. Miller...	Asst. Surg.	" " "

EIGHTY-EIGHTH REGIMENT O. V. I.*

June 20, 1862	Alex. McBride	Surgeon ..	Mustered out with regiment.
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EIGHTY-EIGHTH REGIMENT O. V. I.‡

July 1, 1863	A. Longwell.....	Surgeon ..	Died in service, March 18, 1865.
Mar. 23, 1865	Henry E. Warner...	"	Mustered out with regiment, July 3, 1865.
July 21, 1863	J. H. Cruthers	Asst. Surg.	Promoted Surgeon 65th.
Dec. 17, 1863	Henry E. Warner...	"	Promoted Surgeon.
Mar. 23, 1865	W. W. Fountain	"	Mustered out with regiment, July 3, 1865.
May 3, 1865	J. P. Shilling	"	" " " " " "

EIGHTY-NINTH REGIMENT O. V. I.

Aug. 19, 1862	Harvey Bradley	Surgeon ..	Resigned March 28, 1863.
April 21, 1863	Alfred Taylor.....	"	Drowned on way to reg't, May, 23, 1863.
May 23, 1863	S. B. Crew.....	"	Mustered out with regiment, June 7, 1865.
Aug. 15, 1862	S. B. Crew.....	Asst. Surg.	Promoted Surgeon
Aug. 19, 1862	Colin Spence	"	Resigned May 28, 1863.
July 24, 1863	E. F. Purdum.....	"	Mustered out with regiment, June 7, 1865.

NINETIETH REGIMENT O. V. I.

Aug. 19, 1862	R. H. Tipton.....	Surgeon ..	Mustered out with regiment, June 13, '65.
Aug. 15, 1862	H. W. Carpenter...	Asst. Surg.	Resigned May 18, 1863.
Aug. 19, 1862	J. Wiley	"	" November 5, 1862.
Nov. 5, 1862	C. P. O'Hanlon	"	Mustered out with regiment, June 13, '65.
June 2, 1863	J. P. Coates	"	Resigned December 18, 1863.

* Three months' regiment.

† Six months' regiment.

‡ Three years' regiment.

Roster of Surgeons and Assistant Surgeons—Continued.

NINETY-FIRST REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	G. H. Carpenter.....	Surgeon ..	Resigned May 23, 1863.
May 83, 1863	J. B. Warwick.....	"	Mustered out with regiment, June 24, '65.
Aug. 15, 1862	Thos. McGooney....	Asst. Surg.	Resigned September 13, 1862.
Aug. 19, 1862	J. B. Warwick.....	"	Promoted Surgeon.
Sept. 17, 1862	W. S. Newton.....	"	Promoted Surgeon 193d O. V. I.
Aug. 11, 1863	Granville S. Wellons	"	Mustered out with regiment, June 24, '65.
Mar. 31, 1865	D. G. Alling	"	"

NINETY-SECOND REGIMENT O. V. I.

Aug. 19, 1862	J. D. Cotton.....	Surgeon ..	Mustered out with regiment, June 10, '65.
Aug. 15, 1862	N. B. Sisson	Asst. Surg	Resigned August 15, 1864.
Aug. 20, 1863	J. D. Howell	"	" April 29, 1863.
Aug. 4, 1863	Edwin Booth	"	Never mustered.
May 13, 1864	A. M. Beers.....	"	Mustered out with regiment, June 10, '65.

NINETY-THIRD REGIMENT O. V. I.

Aug. 19, 1862	Geo. R. Ashmun	Surgeon ..	Resigned August 22 1864.
Sept. 19, 1864	James M. Weaver ..	"	Mustered out June 8, 1865.
Aug. 15, 1862	E. Dillon Bowers ...	Asst. Surg	Promoted Surgeon 185th O. V. I.
Aug. 19, 1862	James M. Weaver...	"	Promoted Surgeon.
Mar. 24, 1865	M. L. Brooks, Jr....	"	Mustered out June 8, 1865.

NINETY-FOURTH REGIMENT O. V. I.

Aug. 26, 1862	E. Sinnet.....	Surgeon ..	Resigned September 9, 1863.
Sept. 9, 1863	W. B. Gibson	"	Mustered out June 5, 1865.
Aug. 19, 1862	W. B. Gibson	Asst. Surg.	Promoted Surgeon.
Aug. 3, 1862	L. C. Fouts	"	Resigned April 18, 1863.
Aug. 1, 1863	J. Risley	"	Declined commission.
Jan. 6, 1864	Edwin Booth.....	"	"
April 7, 1864	D. W. Humphreville	"	Mustered out with regiment, June 5, 1865..

NINETY-FIFTH REGIMENT O. V. I.

Aug. 19, 1862	H. Z. Gill.....	Surgeon ..	Transferred to Medical Staff, U. S. Vols.
June 10, 1864	Charles T. Wilbur ..	"	Mustered out with regiment, Aug. 18, '65.
Aug. 18, 1862	Chas. T. Wilbur	Asst. Surg	Promoted Surgeon.
Aug. 19, 1862	E. P. Hoover.....	"	Resigned 1864.
June 27, 1864	Wm. S. Gaines.....	"	Promoted Surgeon 72d O. V. I.

NINETY-SIXTH REGIMENT O. V. I.

Aug. 19, 1862	D. Henderson.....	Surgeon ..	Resigned April 2, 1863.
April 2, 1863	J. F. Hess	"	Mustered out.
Aug. 14, 1862	J. F. Hess	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	Wm. J. Sullivan....	"	Resigned September 28, 1863.
June 1, 1863	Geo. W. Ramage....	"	Honorably discharged December 12, 1864.

NINETY-SEVENTH REGIMENT O. V. I.

Aug. 19, 1862	Thomas W. Gordon	Surgeon ..	Resigned June, 1864.
July 5, 1864	T. A. Steward	"	Mustered out with regiment, June 14, '65.
Aug. 15, 1862	James T. Edwards..	Asst. Surg.	Resigned September 12, 1862.
Aug. 19, 1862	T. A. Steward	"	Promoted Surgeon.
April 4, 1863	Joseph W. Caldwell.	"	Mustered out with regiment, June 14, '65.

Roster of Surgeons and Assistant Surgeons—Continued.

NINETY-EIGHTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 16, 1862	H. West.....	Surgeon..	Resigned October 14, 1863.
Nov. 12, 1863	F. W. Barseilles	"	Died May 1, 1864.
May 10, 1864	W. A. McCracken...	"	Mustered out with regiment, June 1, 1865.
Aug. 20, 1862	T. N. Lewis	Asst. Surg.	Honorably discharged February, 1863.
Aug. 21, 1862	W. T. Sharpe.....	"	Resigned September 14, 1863.
Nov. 4, 1863	W. A. McCracken...	"	Promoted Surgeon.
May 10, 1864	C. P. Simon	"	Mustered out with regiment, June 1, 1865.
March, 1865	C. A. Moore	"	Never mustered.

NINETY-NINTH REGIMENT O. V. I.

Aug. 19, 1862	James T. Woods	Surgeon..	Transferred to 50th O. V. I., Dec. 30, 1864.
Aug. 15, 1862	George J. Wood	Asst. Surg.	Dismissed October 13, 1862.
Aug. 20, 1862	P. H. Clemens	"	Promoted Surgeon U. S. colored regiment.
Mar. 22, 1863	Samuel T. Storer ...	"	Dismissed April 8, 1864.
May 10, 1864	George Sadler	"	Transferred to 50th O. V. I., Dec. 30, 1864.

ONE HUNDREDTH REGIMENT O. V. I.

Aug. 19, 1864	George A. Collamon..	Surgeon..	Mustered out with regiment, June 20, 1865.
July 4, 1862	E. Hitchcock	Asst. Surg.	Never mustered.
Aug. 19, 1862	William H. Thacker ..	"	Discharged October 1, 1863.
Sept. 8, 1862	Robert Johnson	"	Mustered out with regiment, June 20, 1865.

ONE HUNDRED AND FIRST REGIMENT O. V. I.

Aug. 12, 1862	T. M. Cook	Surgeon..	Mustered out with regiment, June 12, 1865.
Aug. 15, 1862	George S. Yingling..	Asst. Surg.	Resigned January 15, 1863.
Aug. 19, 1862	Walter Caswell.....	"	" July 28, 1863.
Aug. 21, 1863	Henry T. Lacey	"	" December 1, 1864.
April, 1865	H. H. Russell.....	"	Mustered out with regiment, June 12, 1865.

ONE HUNDRED AND SECOND REGIMENT O. V. I.

Aug. 26, 1862	A. V. Patterson.....	Surgeon..	Mustered out with regiment, June 30, 1865.
Aug. 9, 1862	George Mitchell	Asst. Surg.	" " " "
Sept. 13, 1862	G. W. Sayres	"	Died of disease, December 26, 1862.
Mar. 30, 1863	Aaron J. Irwin	"	Promoted Surg. 2d Tenn., April 19, 1864

ONE HUNDRED AND THIRD REGIMENT O. V. I.

Aug. 19, 1862	L. D. Griswold	Surgeon..	Resigned July 15, 1864.
Aug. 1, 1864	D. H. Brinkerhoff...	"	" " " "
Aug. 15, 1862	D. H. Brinkerhoff...	Asst. Surg.	Promoted Surgeon.
Aug. 19, 1862	George Butler	"	Resigned May 29, 1863.
Aug. 11, 1863	R. S. Stansbury	"	" January 23, 1864.
Aug. 9, 1864	T. M. Andrews.....	"	Died October 9, 1864.
April 1, 1865	Jacob B. Casebeer ..	"	" " " "

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND FOURTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	Kessey G. Thomas..	Surgeon..	Resigned December 27, 1862.
Feb. 8, 1863	John H. Rodgers....	"	Mustered out December 13, 1864.
Jan. 4, 1865	D. T. Boynton	"	Resigned May 15, 1865.
June 13, 1865	S. E. Sheldon	"	Mustered out with regiment, June 19, 1865.
April 14, 1862	N. R. McKenzie.....	Asst. Surg.	Resigned January 20, 1863.
Aug. 22, 1862	C. C. Stofer	"	Declined commission.
Sept. 4, 1862	R. P. Johnson	"	Resigned February 5, 1863.
Mar. 30, 1863	D. T. Boynton	"	Promoted Surgeon.
May 23, 1863	S. E. Sheldon.....	"	"
June 31, 1865	Israel Bedell	"	Declined commission.
June 30, 1865	D. H. Cowan	"	Never mustered.

ONE HUNDRED AND FIFTH REGIMENT O. V. I.

Aug. 19, 1862	C. N. Fowler	Surgeon..	Mustered out with regiment, June 3, 1865.
Aug. 19, 1862	H. S. Taft	Asst. Surg.	Dismissed February 18, 1864.
Sept. 4, 1862	J. G. Paulding.....	"	Resigned April 8, 1863.
June 30, 1863	John Trumbull	"	Mustered out June 3, 1865.

ONE HUNDRED AND SIXTH REGIMENT O. V. I.

Sept. 4, 1862	George A. Spies.....	Surgeon..	Resigned February 24, 1863.
Mar. 20, 1863	A. F. Shroen.....	"	" January 30, 1864.
Feb. 22, 1864	Eugene Ringler	"	Mustered out with regiment, June 29, 1865.
Oct. 24, 1862	Adolph F. Shroen...	Asst. Surg.	Promoted Surgeon.
July 24, 1863	A. E. Westbrook.....	"	Mustered out with regiment, June 29, 1865.

ONE HUNDRED AND SEVENTH REGIMENT O. V. I.

Aug. 26, 1862	Charles A. Hartman..	Surgeon..	Killed at bat. of Fredericksb'g, May 9, '63.
June 9, 1863	Hubert Shopp	"	Resigned November 9, 1863.
Feb. 10, 1864	John Knaus	"	Mustered out with regiment, July 10, 1865.
Sept. 4, 1862	And. Wannenwietsh	Asst. Surg.	Resigned February 22, 1863.
Dec. 19, 1862	John Knaus	"	Promoted Surgeon.
April 10, 1863	H. Niedermeyer.....	"	Resigned July 28, 1863.
March 8, 1864	Frantz Shill	"	Mustered out with regiment, July 10, 1865.

ONE HUNDRED AND EIGHTH REGIMENT O. V. I.

Aug. 19, 1862	A. Zipperlin	Surgeon..	Mustered out with regiment, June 9, 1865.
Sept. 4, 1862	C. F. Hetlick	Asst. Surg.	Honorably discharged December 9, 1862.
Dec. 24, 1862	Hubert Shopp	"	Promoted Surgeon 107th O. V. I.
July 20, 1863	Henry Ulrich	"	Dismissed July 27, 1864.
Sept. 28, 1864	J. C. Myers	"	Declined commission.
Dec. 7, 1864	Lucius Mills	"	Resigned.
May 16, 1865	Adolph Matzdorff...	"	Mustered out with regiment, June 9, 1865.

ONE HUNDRED AND TENTH REGIMENT O. V. I.

Sept. 4, 1862	S. Pixley	Surgeon..	Resigned May 1, 1863.
May 1, 1863	R. R. McCandlass...	"	Mustered out with regiment, June 25, 1865.
Aug. 26, 1862	R. E. McCandlass...	Asst. Surg.	Promoted Surgeon.
Aug. 20, 1862	T. C. Owen	"	Resigned April 20, 1864.
July 20, 1863	H. H. Bishop	"	Declined commission.
April 1, 1864	A. W. Pinkerton....	"	Resigned August 20, 1864.
July 13, 1864	W. H. Park	"	Mustered out with regiment, June 25, 1864.
Sept. 5, 1864	E. P. Ebersole	"	" " " "

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRETH AND ELEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	Lyman A. Brewer.....	Surgeon ..	Mustered out with reg't, June 27, 1865.
Sept. 10, 1862	D. H. Silver.....	Asst. Surg.	Died June 27, 1864.
Sept. 13, 1862	C. M. Chalfant.....	"	Transferred to U. S. Colored Troops.
July 10, 1864	John W. Ulock.....	"	Mustered out with reg't, June 27, 1865.

ONE HUNDRED AND THIRTEENTH REGIMENT O. V. I.

Aug. 19, 1862	James R. Black.....	Surgeon ..	Resigned July 31, 1863.
Aug. 1, 1863	Albert Wilson.....	"	Mustered out with reg't, July 6, 1865.
Sept. 1, 1862	Alonzo Harlow.....	Asst. Surg.	Resigned May 11, 1863.
Sept. 3, 1862	T. C. Tipton.....	"	June 8, 1863.
May 19, 1863	George W. Kemp.....	"	Oct. 6, 1863.
July 20, 1863	H. M. Bassett.....	"	Promoted Surgeon 121st O. V. I.

ONE HUNDRED AND FOURTEENTH REGIMENT O. V. I.

Aug. 20, 1862	O. E. French.....	Surgeon ..	Mustered out November 27, 1864.
Nov. 27, 1864	Byron Stanton.....	"	Transferred Ass't Surgeon U. S. V.
June 5, 1865	John C. Gill.....	"	Mustered out with reg't July 31, 1865.
Aug. 22, 1862	H. Leonardson.....	Asst. Surg.	Resigned June 20, 1863.
Nov. 7, 1862	A. A. Bean.....	"	April 15, 1863.
July 18, 1863	Thomas C. Baird.....	"	Transferred to 48th O. V. I., July 19, '65.
Aug. 20, 1862	W. L. Peek.....	"	Promoted Surgeon 3d Reg't O. V. I.
Nov. 27, 1864	John C. Gill.....	"	Promoted Surgeon.

ONE HUNDRED AND FIFTEENTH REGIMENT O. V. I.

Sept. 1, 1862	H. B. Johnson.....	Surgeon ..	Resigned February 17, 1865.
Mar. 11, 1865	W. H. Jones.....	"	Mustered out with reg't, June 22, 1865.
Sept. 1, 1862	J. L. Brenton.....	Asst. Surg.	Promoted Surgeon 8th O. V. I.
Sept. 23, 1862	A. Jones Patterson....	"	Resigned 1864.
April 1, 1863	W. H. Jones.....	"	Promoted Surgeon.
May 30, 1864	George W. Barrowes..	"	Declined commission.
Sept. 15, 1864	A. B. Beers.....	"	" "
Aug. 8, 1864	L. D. Richards.....	"	" "
Sept. 19, 1864	J. W. Reed.....	"	Mustered out with reg't, June 22, 1865.

ONE HUNDRED AND SIXTEENTH REGIMENT O. V. I.

Sept. 4, 1862	A. R. Gilkey.....	Surgeon ..	Died June 4, 1863.
July 26, 1863	Thomas J. Shannon...	"	Killed in battle, October 19, 1864.
Dec. 27, 1864	T. Curtis Smith.....	"	Mustered out with reg't, June 14, 1865.
Aug. 19, 1862	John Q. A. Hudson...	Asst. Surg.	Resigned March 24, 1863.
Mar. 27, 1863	T. Curtis Smith.....	"	Promoted Surgeon.
Aug. 22, 1862	James Johnson.....	"	Resigned February 19, 1863.
April 14, 1863	James L. Brown.....	"	October, 1864.
Jan. 5, 1865	John Sampsell.....	"	Mustered out with reg't, June 14, 1865.
Feb. 16, 1865	James T. Munroe.....	"	Never mustered.

ONE HUNDRED AND SEVENTEENTH REGIMENT O. V. I.*

Sept. 8, 1862	J. L. Firestone.....	Surgeon ..	Mustered out with reg't, July 25, 1865.
Sept. 19, 1862	C. M. Finch.....	Asst. Surg.	Transferred to 9th O. V. C.
Dec. 11, 1862	W. C. Payne.....	"	Declined commission.
Dec. 22, 1862	S. Albright.....	"	Resigned August 18, 1863.
May 8, 1863	Silas E. Sheldon	"	Never mustered.
July 21, 1863	Wm. T. Evans.....	"	" "
Aug. 12, 1863	E. G. Hard.....	"	Resigned August 23, 1864.
Nov. 10, 1863	N. B. Lafferty.....	"	January 9, 1865.
January, 1865	Henry C. Beard.....	"	Mustered out with reg't, July 25, 1865.
Feb. 1, 1865	George A. E. Corry....	"	" "

* First Regiment Ohio Heavy Artillery.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND EIGHTEENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 19, 1862	Wm. H. Phillips.....	Surgeon ..	Resigned May 7, 1864.
June 3, 1864	W. Morrow Beach....	"	Mustered out with reg't, June 24, 1865.
Aug. 27, 1862	H. A. Bodman.....	Asst. Surg.	Resigned December 3, 1862.
Dec. 26, 1862	N. S. Richardson.....	"	Promoted Surgeon 13th O. V. C.
Sept. 5, 1862	W. B. Shaffer.....	"	Resigned February 3, 1864.
April 27, 1864	John E. Patterson....	"	Mustered out with reg't, June 24, 1865.

ONE HUNDRED AND NINETEENTH REGIMENT O. V. I.

Aug. 25, 1862	O. E. Davis.....	Surgeon ..	Must. out by failure of reg't to organize.
Aug. 19, 1862	A. Buckingham.....	Asst. Surg.	" " " "
Aug. 29, 1862	A. J. Patterson.....	"	" " " "

ONE HUNDRED AND TWENTIETH REGIMENT O. V. I.

Sept. 4, 1862	W. W. Taggart.....	Surgeon ..	Resigned November 13, 1862.
Dec. 26, 1862	Byron Stanton.....	"	Transferred Surgeon 114th O. V. I.
Sept. 1, 1862	J. W. Hammond.....	Asst. Surg.	Resigned August 5, 1863.
Sept. 4, 1862	C. C. Stofer.....	"	" January 26, 1864.
Feb. 23, 1864	John C. Gill.....	"	Transferred Asst. Surgeon 114th O. V. I.

ONE HUNDRED AND TWENTY-FIRST REGIMENT O. V. I.

Sept. 3, 1862	T. B. Williams.....	Surgeon ..	Resigned April, 1865.
April 12, 1863	H. M. Bassett.....	"	Mustered out with reg't, June 8, 1865.
Sept. 3, 1862	S. S. Scoville.....	Asst. Surg.	Resigned May 4, 1863.
Sept. 8, 1862	N. S. Hill.....	"	Promoted Surgeon 62d O. V. I.
May 30, 1862	S. T. Critchfield.....	"	Never mustered.
April 1, 1864	George A. Haise.....	"	" "

ONE HUNDRED AND TWENTY-SECOND REGIMENT O. V. I.

Sept. 4, 1862	Thaddens A. Reamy..	Surgeon ..	Resigned June 5, 1863.
Jan 5, 1863	Wm. M. Houston.....	"	Mustered out with reg't, June 26, 1865.
Sept. 8, 1862	Wm. M. Houston.....	Asst. Surg.	Promoted Surgeon.
Jan. 16, 1863	Alvah Richards.....	"	Promoted Surgeon 126th O. V. I.
Feb. 8, 1863	W. G. Bryant.....	"	Promoted Surgeon 197th O. V. I.

ONE HUNDRED AND TWENTY-THIRD REGIMENT O. V. I.

Sept. 4, 1862	O. Ferris.....	Surgeon ..	Resigned December 1, 1864.
Dec. 5, 1864	W. B. Hyatt.....	"	Mustered out with reg't, June 12, 1865.
Sept. 16, 1862	J. H. Williams.....	Asst. Surg.	Resigned January 25, 1864.
Oct. 4, 1862	W. B. Hyatt.....	"	Promoted Surgeon.
Mar. 22, 1864	N. B. Brisbane.....	"	Mustered out with reg't, June 12, 1865.

ONE HUNDRED AND TWENTY-FOURTH REGIMENT O. V. I.

Aug. 20, 1862	J. W. Smith.....	Surgeon ..	Resigned January 31, 1863.
Mar. 11, 1863	D. C. Patterson.....	"	Mustered out with reg't, July 9, 1865.
Aug. 15, 1862	George Connell.....	Asst. Surg.	Resigned.
Aug. 19, 1862	D. C. Patterson.....	"	Promoted Surgeon.
Mar. 11, 1863	D. A. Morse.....	"	Honorably discharged, August 12, 1863.
April 21, 1863	T. S. Bidwell.....	"	Mustered out with reg't, July 9, 1865.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND TWENTY-FIFTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Aug. 20, 1862	H. McHenry	Surgeon ..	Resigned.
June 9, 1865	Wm. E. McKim	"	Mustered out with regiment Oct., 1865.
Aug. 21, 1862	Porter Yates	Asst. Surg.	Resigned May 6, 1863.
Aug. 23, 1862	J. E. Darby	"	Declined commission.
May 24, 1863	J. G. Buchanan	"	Resigned.
Mar. 19, 1865	Wm. E. McKim	"	Promoted Surgeon,

ONE HUNDRED AND TWENTY-SIXTH REGIMENT O. V. I.

Sept. 2, 1862	W. Estip	Surgeon ..	Resigned Feb. 5, 1864.
Feb. 5, 1864	J. Sykes Ely	"	Transferred to U. S. Vols.
Aug. 1, 1864	Ithamer B. Weed ...	"	Resigned Nov. 14, 1864.
Dec. 11, 1864	Alva Richards	"	Mustered out with regiment June 25, 1865.
Nov. 7, 1862	J. Sykes Ely	Asst. Surg.	Promoted Surgeon.
Jan. 8, 1863	J. P. Alcon	"	Revoked by the Governor.
Mar. 29, 1863	Ithamer B. Weed ...	"	Promoted Surgeon.
June 25, 1864	Joshua Worly	"	Mustered out with regiment June 25, 1865.

ONE HUNDRED AND TWENTY-EIGHTH REGIMENT O. V. I.

Feb. 24, 1862	A. H. Woodbridge ..	Surgeon ..	Mustered out with regiment July 13, 1865.
Jan. 4, 1864	Wm. A. Tripp	Asst. Surg.	" " "
Jan. 4, 1864	Porter Yates	"	" " "

ONE HUNDRED AND TWENTY-NINTH REGIMENT O. V. I.

June 23, 1863	Gustav. C. E. Weber	Surgeon ..	Resigned, 1863.
Aug. 11, 1863	John W. Smith	Asst. Surg.	Mus. out at expiration of term of service.
Aug. 14, 1863	James B. Campbell ..	"	" " " "

ONE HUNDRED AND THIRTIETH REGIMENT OHIO NATIONAL GUARD.*

May 14, 1864	Samuel S. Thorn	Surgeon ..	Mustered out with regiment Sept. 22, 1864.
May 20, 1864	Calvin Hathaway ..	Asst. Surg.	" " "

ONE HUNDRED AND THIRTY-FIRST REGIMENT O. N. G.*

May 14, 1864	Orson Britton	Surgeon ..	Mustered out with regiment Aug. 25, 1864.
May 14, 1864	Levi B. Lathrop	Asst. Surg.	" " "

ONE HUNDRED AND THIRTY-SECOND REGIMENT O. N. G.*

May 15, 1864	Wm. J. Sullivan	Surgeon ..	Mustered out with regiment Sept. 10, 1864.
May 15, 1864	Richard Edwards	Asst. Surg.	" " "
May 24, 1864	Albert F. Matson ...	"	" " "

ONE HUNDRED AND THIRTY-THIRD REGIMENT O. N. G.*

May 7, 1864	C. P. Landon	Surgeon ..	Mustered out with regiment Aug. 20, 1864.
May 7, 1864	R. N. McConnel	Asst. Surg.	" " "
May 21, 1864	David Ridenour	"	" " "

ONE HUNDRED AND THIRTY-FOURTH REGIMENT O. N. G.*

May 6, 1864	James F. Spain	Surgeon ..	Mustered out with regiment Aug. 31, 1864.
May 7, 1864	B. F. Baker	Asst. Surg.	" " "

* One hundred days' Regiments.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND THIRTY-FIFTH REGIMENT O. N. G.*

Date.	Name.	Rank.	Remarks.
May 10, 1864	M. M. Stimmel.....	Sergeon ..	Mustered out with regiment Sept. 1, 1864.
May 8, 1864	David H. Gregory...	Asst. Surg.	" " "
May 9, 1864	Wm. Jones, jr.....	"	" " "

ONE HUNDRED AND THIRTY-SIXTH REGIMENT O. N. G.*

May 13, 1864	Wm. F. Brown	Surgeon ..	Died in service.
May 13, 1864	Wm. Reed.....	Asst. Surg.	Mustered out.

ONE HUNDRED AND THIRTY-SEVENTH REGIMENT O. N. G.*

May 10, 1864	Wm. B. Davis	Surgeon ..	Mustered out.
May 27, 1864	Chas. Hunt.....	Asst. Surg.	" "
July 16, 1864	Jas. Culbertson.....	"	" "

ONE HUNDRED AND THIRTY-EIGHTH REGIMENT O. N. G.*

May 15, 1864	Charles P. Wilson ..	Surgeon ..	Mustered out with regiment Sept. 1, 1864.
June 5, 1864	Amos B. Fuller	Asst. Surg.	" " "
June 21, 1864	Hiram H. Russell...	"	" " "

ONE HUNDRED AND THIRTY-NINTH REGIMENT O. N. G.*

May 23, 1864	John Hill	Surgeon ..	Mustered out with regiment Aug. 26, 1864.
May 22, 1864	B. F. McKennon	Asst. Surg.	" " "

ONE HUNDRED AND FORTIETH REGIMENT O. N. G.*

May 10, 1864	Daniel C. Rathbone..	Surgeon ..	Mustered out with regiment Sept. 3, 1864.
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ONE HUNDRED AND FORTY-FIRST REGIMENT O. N. G.*

May 11, 1864	Charles L. Wilson ..	Surgeon ..	Mustered out with regiment Sept. 3, 1864.
May 19, 1864	James Johnson	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-SECOND REGIMENT O. N. G.*

May 13, 1864	Wilson N. King....	Surgeon ..	Mustered out with regiment Sept. 2, 1864.
May 13, 1864	Jacob Stamp	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-THIRD REGIMENT O. N. G.*

May 14, 1864	Samuel H. Lee	Surgeon ..	Mustered out with regiment Sept. 13, 1864.
June 13, 1864	Geo. M. Chandler ...	Asst. Surg.	" " "

ONE HUNDRED AND FORTY-FOURTH REGIMENT O. N. G.*

May 11, 1864	James L. Mountz ...	Surgeon ..	Mustered out with regiment Aug. 31, 1864.
May 12, 1864	G. Moodie White....	Asst. Surg.	" " "
May 24, 1864	E. F. Baker.....	"	" " "

ONE HUNDRED AND FORTY-FIFTH REGIMENT O. N. G.*

May 12, 1864	Henry Besse.....	Surgoon ..	Mustered out.
May 12, 1864	John D. Junney	Asst. Surg.	" "

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND FORTY-SIXTH REGIMENT O. N. G.*

Date.	Name.	Rank.	Remarks.
May 12, 1864	Isaac L. Drake	Surgeon ..	Mustered out with reg't Sept. 7, 1864.
May 12, 1864	Otho Evans, Jr. ...	Ass't Surg.	" " "
May 16, 1864	Amos Sellers	"	" " "

ONE HUNDRED AND FORTY-SEVENTH REGIMENT O. N. G.*

May 16, 1864	Horace Coleman ..	Surgeon ..	Mustered out with reg't Aug. 30, 1864.
June 22, 1864	H. K. Hershisser ...	Ass't Surg.	" " "

ONE HUNDRED AND FORTY-EIGHTH REGIMENT O. N. G.*

May 18, 1864	Wm. Beebee	Surgeon ..	Mustered out with reg't Sept. 14, 1864.
May 18, 1864	B. F. Culver	Ass't Surg.	" " "

ONE HUNDRED AND FORTY-NINTH REGIMENT O. N. G.*

May 11, 1864	Wm. A. Brown....	Surgeon ..	Mustered out with reg't Aug. 30, 1864.
May 11, 1864	B. F. Miesee	Ass't Surg.	" " "

ONE HUNDRED AND FIFTIETH REGIMENT O. N. G.*

May 15, 1864	James W. Smith ..	Surgeon ..	Mustered out with reg't Aug. 23, 1864.
May 5, 1864	Charles F. Dalton	Ass't Surg.	" " "
May 5, 1864	Jas. F. Armstrong.	"	" " "

ONE HUNDRED AND FIFTY-FIRST REGIMENT O. N. G.*

May 13, 1864	Wm. H. Harper ...	Surgeon ..	Mustered out with reg't Aug. 27, 1864.
May 13, 1864	A. G. Holloway ...	Ass't Surg.	" " "
May 13, 1864	J. R. Kelch	"	" " "

ONE HUNDRED AND FIFTY SECOND REGIMENT O. N. G.*

May 11, 1864	Jno. C. Williamson	Surgeon ..	Mustered out with reg't Sept. 2, 1864.
May 11, 1864	John A. Jobes.....	Ass't Surg.	" " "

ONE HUNDRED AND FIFTY-THIRD REGIMENT O. N. G.*

May 10, 1864	John S. Combs....	Surgeon ..	Mustered out.
May 10, 1864	John O. Marsh	Ass't Surg.	" "

ONE HUNDRED AND FIFTY-FOURTH REGIMENT O. N. G.*

May 9, 1864	George Watts.....	Surgeon ..	Mustered out with reg't Sept. 1, 1864.
May 9, 1864	Leigh McClung ...	Ass't Surg.	" " "

ONE HUNDRED AND FIFTY-FIFTH REGIMENT O. N. G.*

Aug. 5, 1864	R. S. Stansbury ...	Surgeon ..	Mustered out with reg't Aug. 27, 1864.
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ONE HUNDRED AND FIFTY-SIXTH REGIMENT O. N. G.*

May 17, 1864	V. G. Miller.....	Surgeon ..	Mustered out with reg't Sept. 1, 1864.
May 17, 1864	Jas. N. Robinson..	Ass't Surg.	" " "
May 17, 1864	Caleb S. Evans ...	"	" " "

* One hundred days's regiments.

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND FIFTY-SEVENTH REGIMENT O. N. G.*

Date.	Name.	Rank.	Remarks.
May 15, 1864	Wm. M. Eames....	Surgeon ..	Mustered out with reg't Sept, 6, 1864.
May 15, 1864	Thos. B. Eagle	Ass't Surg.	" " "
May 25, 1864	B. H. Fisher	"	" " "

ONE HUNDRED AND FIFTY-NINTH REGIMENT O. N. G.*

May 10, 1864	Robert Chamberlin	Surgeon ..	Mustered out Aug. 22, 1864.
May 19, 1864	W. H. Holden.....	Ass't Surg	" "

ONE HUNDRED AND SIXTIETH REGIMENT O. N. G.*

May 13, 1864	John Krops	Surgeon ..	Mustered out.
May 13, 1864	Calvin B. Holcomb	Ass't Surg	" "

ONE HUNDRED AND SIXTY-FIRST REGIMENT O. N. G.*

.....	Martin G. Hajin...	Surgeon ..	Mustered out.
May 9, 1864	Henry C. Tucker..	Ass't Surg.	" "

ONE HUNDRED AND SIXTY-SECOND REGIMENT O. N. G.*

May 20, 1864	D. A. Morse.....	Surgeon ..	Mustered out with reg't Sept. 4, 1864.
May 20, 1864	Thos. H. Whitacre.	Ass't Surg.	" " "
May 20, 1864	D. H. Miller.....	"	" " "

ONE HUNDRED AND SIXTY-THIRD REGIMENT O. N. G.*

May 13, 1864	Alex. Sutherland..	Surgeon ..	Mustered out with reg't Sept. 10, 1864.
May 13, 1864	James O. Carter...	Ass't Surg.	" " "
May 13, 1864	David C. McMillen	"	" " "

ONE HUNDRED AND SIXTY-FOURTH REGIMENT O. N. G.*

May 11, 1864	Robert W. Hales..	Surgeon ..	Mustered out with reg't Aug. 27, 1864.
May 11, 1864	George S. Yingling	Ass't Surg.	" " "
May 11, 1864	John F. Shaffner..	"	" " "

ONE HUNDRED AND SIXTY-FIFTH REGIMENT O. N. G.*

.....	George Mallory ...	Surgeon ..	Mustered out with reg't Aug. 31, 1864.
.....	Sol. Wolf	Ass't Surg.	" " "

ONE HUNDRED AND SIXTY-SIXTH REGIMENT O. N. G.*

May 15, 1864	Thos. M. Ebright..	Surgeon ..	Mustered out with reg't Sept. 9, 1864.
May 15, 1864	Wm. H. Sykes.....	Ass't Surg.	" " "
May 27, 1864	Henry C. Newkirk.	"	" " "

ONE HUNDRED AND SIXTY-SEVENTH REGIMENT O. N. G.*

May 16, 1864	Moses H. Haynes..	Surgeon ..	Mustered out with reg't Sept. 8, 1864.
May 16, 1864	James S. Ferguson.	Ass't Surg.	" " "

ONE HUNDRED AND SIXTY-EIGHTH REGIMENT O. N. G.*

May 19, 1864	B. D. Granger.....	Surgeon ..	Mustered out with reg't Sept. 8, 1864.
.....	Chas. H. Smith....	Ass't Surg.	" " "

* One hundred days' regiments.

Roster of Surgeons and Assistant Surgeons—Continued.
ONE HUNDRED AND SIXTY-NINTH REGIMENT O. N. G.*

Date.	Name.	Rank.	Remarks.
May 15, 1864	Peter Beauregard.....	Surgeon ..	Mustered out with reg't Sept. 4, 1864.
July 6, 1864	O. C. McCarty	Ass't Surg.	" " " "
July 17, 1864	Charles Hunt.....	"	" " " "

ONE HUNDRED AND SEVENTIETH REGIMENT O. N. G.*

May 17, 1864 James B. Crawford .. [Surgeon ..] Mustered out with reg't Sept. 10, 1864.

ONE HUNDRED AND SEVENTY-FIRST REGIMENT O. N. G.*

May 7, 1864 Fred'k C. Applegate .. [Surgeon ..] Mustered out with reg't Aug. 20, 1864
 May 10, 1864 Benjamin F. Pitman .. [Ass't Surg.] " " " "
 May 10, 1864 Albert G. Minor..... " " " "

ONE HUNDRED AND SEVENTY-SECOND REGIMENT O. N. G.*

May 11, 1864 John Morgan..... [Surgeon ..] Mustered out with reg't Sept. 3, 1864.
 June 8, 1864 George Wyman..... [Ass't Surg.] " " " "
 June 17, 1864 Ed. B. Morher

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND SEVENTY-NINTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
Sept. 26, 1864	William H. Wilson ...	Surgeon ..	Mustered out with reg't June 17, 1865.
Sept. 27, 1864	M. H. Logue.....	Ass't Surg.	" " " "
Sept. —, 1864	William E. Patterson ..	"	Declined commission.
Oct. 3, 1864	F. W. Inman	"	Resigned Feb. 20, 1865.
April 29, 1865	Howard C. LaForce...	"	Mustered out with reg't June 17, 1865.

ONE HUNDRED AND EIGHTIETH REGIMENT O. V. I.

Oct. 20, 1864	Frank E. Powers.....	Surgeon ..	Mustered out with reg't July 12, 1865.
Oct. 10, 1864	James N. Bolard.....	Ass't Surg.	" " " "
Oct. 11, 1864	Calvin D. Case	"	Discharged April 22, 1865.
July —, 1865	William H. Brown....	"	Mustered out with reg't July 12, 1865.

ONE HUNDRED AND EIGHTY-FIRST REGIMENT O. V. I.

Oct. 20, 1864	Solomon Wolff.....	Surgeon ..	Mustered out with reg't July 14, 1865.
Oct. 21, 1864	Albert Force.....	Ass't Surg.	" " " "
Oct. 21, 1864	Thomas B. Eagle	"	Declined commission.
Nov. 2, 1864	Oliver C. McCartney..	"	Mustered out with reg't July 14, 1865.

ONE HUNDRED AND EIGHTY-SECOND REGIMENT O. V. I.

Oct. 10, 1864	William Tripp.....	Surgeon ..	Declined commission.
Oct. 20, 1864	Milton Valentine	"	Resigned March 18, 1865.
Mar. 31, 1865	George Cassaday	"	Mustered out with reg't July 7, 1865.
Oct. 20, 1864	Abraham H. Iler.....	Ass't Surg.	" " " "
Oct. 19, 1864	Peter Willett.....	"	Resigned March 21, 1865.
April 10, 1865	Thomas J. Thompson ..	"	Mustered out with reg't July 7, 1865.

ONE HUNDRED AND EIGHTY-THIRD REGIMENT O. V. I.

Nov. 12, 1864	Cyrus Hosack	Surgeon ..	Mustered out with reg't July 17, 1865.
Nov. 11, 1864	F. C. Plunkett.....	Ass't Surg.	" " " "
Nov. 12, 1864	Edward F. Baker.....	"	" " " "

ONE HUNDRED AND EIGHTY-FOURTH REGIMENT O. V. I.

Feb. 18, 1865	T. G. Myer	Surgeon ..	Mustered out with reg't Sept. 20, 1865.
Feb. 18, 1865	Rob't A. Richardson ..	Ass't Surg.	" " " "
Feb. 28, 1865	H. H. Shaw.....	"	" " " "
April 25, 1865	E. W. Price	"	Mustered out as supernumerary.

ONE HUNDRED AND EIGHTY-FIFTH REGIMENT O. V. I.

Mar. 3, 1865	E. Dillon Bowers	Surgeon ..	Mustered out with reg't Oct. 3, 1865.
Mar. 17, 1865	Douglass Bell.....	Ass't Surg.	Never mustered.
Feb. 25, 1865	Foster Bodel	"	Mustered out with reg't Oct. 3, 1865.
June 17, 1865	James H. Welsh	"	" " " "

ONE HUNDRED AND EIGHTY-SIXTH REGIMENT O. V. I.

Mar. 1, 1865	W. H. Matchett.....	Surgeon ..	Mustered out with reg't Sept 18, 1865.
Mar. 1, 1865	William Hargreaves..	Ass't Surg.	" " " "
Mar. 23, 1865	T. M. Coleman.....	"	" " " "

Roster of Surgeons and Assistant Surgeons—Continued.

ONE HUNDRED AND EIGHTY-SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
April 17, 1865	Henry M. Shaffer	Surgeon ..	Resigned June, 1865.
June 1866	Theo. H. Patterson.....	"	
Mar. 8, 1865	Henry M. Shaffer.....	Asst. Surg.	Promoted Surgeon.
April 3, 1865	Theo. H. Patterson.....	"	"
May 2, 1865	Wm. B. Shaffer.....	"	
July 17, 1865	W. H. Carpenter.....	"	

ONE HUNDRED AND EIGHTY-EIGHTH REGIMENT O. V. I.

Mar. 7, 1865	Aug. W. Munson.....	Surgeon ..	Mustered out with regt. Sept. 21, 1865.
Mar. 4, 1865	John M. Wheaton.....	Asst. Surg.	" " "
Mar. 14, 1865	Hannibal Landon.....	"	" " "

ONE HUNDRED AND EIGHTY-NINTH REGIMENT O. V. I.

Mar. 9, 1865	Sidney E. Gordon	Surgeon ..	Mustered out with regt. Sept. 28, 1865.
Mar. 10, 1865	L. S. B. Otwell	Asst. Surg.	" " "
Mar. 10, 1865	Curtis Otwell.....	"	" " "

ONE HUNDRED AND NINETY-FIRST REGIMENT O. V. I.

March 6, 1865	Jas. W. Warfield.....	Surgeon ..	Mustered out with regt. Aug. 27, 1865.
" "	B. F. McKinnon	Asst. Surg.	" " "
" "	George Willis.....	"	" " "

ONE HUNDRED AND NINETY-SECOND REGIMENT O. V. I.

Mar. 15, 1865	Wm. S. Parker	Surgeon ..	Mustered out with regt. Sept. 1, 1865.
Mar. 9, 1865	Calvin B. Holcomb ...	Asst. Surg.	" " "
Mar. 15, 1865	H. B. Martin.....	"	" " "

ONE HUNDRED AND NINETY-THIRD REGIMENT O. V. I.

Mar. 17, 1865	Wm. S. Newton.....	Surgeon ..	Mustered out with regt. Aug. 4, 1865.
" 14, 1865	J. P. Waste.....	Asst. Surg.	" " "
" 22, 1865	Ambrose Brown.....	"	" " "

ONE HUNDRED AND NINETY-FOURTH REGIMENT O. V. I.

Mar. 14, 1865	Jos. E. Barrett.....	Surgeon ..	Resigned June, 1865.
June 1865	Thos. J. Livers	"	Mustered out with regt. Oct. 24, 1865.
Mar. 14, 1865	Jacob T. Franks	Asst. Surg	Mustered out from date of muster in.
Mar. 20, 1865	Thos. J. Livers	"	Promoted Surgeon.
July 15, 1865	B. F. Graham.....	"	Dismissed by order Sec. War, Oct. '65.

ONE HUNDRED AND NINETY-FIFTH REGIMENT O. V. I.

Mar. 19, 1865	John Dickerson.....	Surgeon ..	
" 16, 1865	D. B. Elson.....	Asst. Surg.	
" 31, 1865	Hugh S. Strain	"	

ONE HUNDRED AND NINETY-SIXTH REGIMENT O. V. I.

April 1865	H. B. Noble	Surgeon ..	Mustered out with regt. Sept. 11, 1865.
Mar. 21, 1865	J. W. Driscoll.....	Asst. Surg.	" " "
" 22, 1865	C. J. Shields.....	"	" " "

Roster of Surgeons and Assistant Surgeons—Continued.
ONE HUNDRED AND NINETY-SEVENTH REGIMENT O. V. I.

Date.	Name.	Rank.	Remarks.
April 1, 1865	W. G. Bryant.....	Surgeon ..	Mustered out with regt. July 31, '65.
Mar. 30, 1865	Geo. W. Pease.....	Asst. Surg.	" " " "
" 31, 1865	Amos Laurence.....	"	" " " "

FIRST REGIMENT OHIO CAVALRY.

Aug. 19, 1862	Rudolph Wirth.....	Surgeon ..	Resigned Nov. 20, 1863.
Dec. 19, 1863	Wilson V. Cowan.....	"	" July, 1864.
Dec. 9, 1864	John Cannan.....	"	Mustered out with regt. Sept. 13, '65.
Oct. 10, 1861	John Cannan.....	Asst. Surg.	Promoted Surgeon.
Aug. 20, 1862	John B. McDill.....	"	Mustered out.

SECOND REGIMENT OHIO CAVALRY.

Aug. 27, 1861	Alfred Taylor.....	Surgeon ..	Transferred to 89th O. V. I.
April 21, 1863	Joseph T. Smith.....	"	Resigned March 28, 1865.
April 17, 1865	W. H. McReynolds....	"	" June 8, 1865.
June 14, 1865	N. B. Brisbane.....	"	Mustered out with regt. Sept. 11, '65.
Aug. 28, 1861	Jos. T. Smith.....	Asst. Surg.	Promoted Surgeon.
June 9, 1863	H. B. Noble.....	"	" 196th O. V. I.
Oct. 22, 1862	H. McReynolds.....	"	" " "
May 18, 1865	Mathias Cooke.....	"	Mustered out with regt. Sept. 11, '65.

THIRD REGIMENT OHIO CAVALRY.

Oct. 28, 1861	M. C. Cuykendall.....	Surgeon ..	Resigned, 1864.
Dec. 1, 1864	W. B. Boyd.....	"	Mustered out with regt. Aug. 4, '65.
Nov. 4, 1861	S. F. Selby.....	Asst. Surg.	Resigned Nov. 5, 1863.
Aug. 19, 1862	John K. Moore.....	"	Mustered out Dec. 8, 1862.
Jan. 5, 1863	John G. Bigham.....	"	Declined commission.
Mar. 30, 1864	W. B. Boyd.....	"	Promoted Surgeon.
Mar. 31, 1864	W. W. Bickett.....	"	Mustered out with regt. Aug. 4, '65.

FOURTH REGIMENT O. V. CAVALRY.

Sept. 5, 1861	Lucien A. James.....	Surgeon ..	Resigned September 5, 1864.
Oct. 24, 1864	Orestes G. Field.....	"	Mustered out with regt. July 15, '65.
Sept. 5, 1861	Thomas McMillen.....	Asst. Surg.	Resigned July 8, 1862.
July 8, 1862	J. R. Weist.....	"	" November 6, 1863.
Aug. 19, 1862	H. B. Noble.....	"	Mustered out.
Aug. 1, 1863	H. H. Ford.....	"	Declined commission.
March 8, 1864	Orestes G. Field.....	"	Promoted Surgeon.
Nov. 26, 1864	Cyrus P. H. Biggs.....	"	Mustered out with regt. July 15, '65.

FIFTH REGIMENT O. V. CAVALRY.

Aug. 27, 1861	Chas. Thornton.....	Surgeon ..	Mustered out August 31, 1864.
Oct. 20, 1864	D. V. Rannels.....	"	Resigned July, 1865.
Aug. 1865	Wm. McMillen.....	"	Mustered out with regt. Oct. 30, '65.
Sept. 11, 1861	George Sprague.....	Asst. Surg.	Resigned August, 1864.
Aug. 19, 1862	D. V. Rannels.....	"	Promoted Surgeon.
Jan. 18, 1865	A. J. Shohoney.....	"	Mustered out with regt. Oct. 30, '65.

Roster of Surgeons and Assistant Surgeons—Continued.

SIXTH REGIMENT O. V. C.

Date.	Name.	Rank.	Remarks.
Oct. 24, 1861	W. B. Resner	Surgeon ..	Must'd out at exp'n of term, Nov 9, '64.
Dec. 5, 1864	A. D. Rockwell	"	Mustered out with reg't Aug. 7, 1865.
Nov. 30, 1861	S. C. Mam	Ass't Surg.	Resigned September 15, 1862.
Sept. 15, 1862	Z. Northway	"	Died of disease September 27, 1864.
May 26, 1863	A. P. Knowlton	"	Resigned December 18, 1863.
Jan. 19, 1864	Jos. Hebble	"	Never mustered.
April 7, 1864	A. D. Rockwell	"	Promoted Surgeon.
Feb. 8, 1865	Asa S. Ashton	"	Declined commission.
April —, 1865	Cuno Rebele	"	Mustered out with reg't Aug. 7, 1865.

SEVENTH REGIMENT O. V. C.

Oct. 9, 1862	Isaac Train	Surgeon ..	Mustered out with reg't July 4, 1865.
Nov. 6, 1862	R. H. Tullus	Ass't Surg.	Died September 20, 1864, at Marietta, Ga.
June 12, 1863	P. G. Barrett	"	Transferred Surgeon U. S. C. T.
Jan. 4, 1865	John Krap	"	Mustered out with regiment July 4, '65

EIGHTH REGIMENT O. V. C.

Oct. 22, 1862	W. B. Davis	Surgeon ..	Resigned.
Nov. 1, 1864	M. J. Bowland	"	Mustered out with reg't July 30, 1865.
Feb. 10, 1865	R. W. Richardson	Ass't Surg.	Declined commission.
Mar. 11, 1863	B. F. Davis	"	Mustered out with reg't July 30, 1865.
May 22, 1865	Lewis H. Hazeltine ...	"	" " " " " "

NINTH REGIMENT O. V. C.

Sept. 19, 1862	C. M. Finch	Surgeon ..	Mustered out with reg't July 20, 1865.
Mar. 26, 1863	Wm. McMillan	Ass't Surg.	" " " " "
Oct. 5, 1863	Jas. C. Thorpe	"	Dismissed April 19, 1864.
April 23, 1864	Charles H. Pinney	"	Mustered out with reg't July 20, 1865.

TENTH REGIMENT O. V. C.

Oct. 22, 1862	Jas. W. Thompson	Surgeon ..	Died November 25, 1864.
Dec. 5, 1864	Michael Hawes	"	Mustered out with reg't July 24, 1865.
Feb. 14, 1863	M. Valentine	Ass't Surg.	Resigned October 8, 1863.
Feb. 1, 1863	W. G. Hall	"	" September 12, 1863.
Oct. 28, 1863	Michael Hawes	"	Promoted Surgeon.
Mar. 10, 1864	Jas. F. Gardner	"	Resigned January 18, 1865.

ELEVENTH REGIMENT O. V. C.

July 20, 1863	George C. Underhill...	Surgeon ..	Mustered out April 1, 1865.
July 20, 1863	John H. Finefrock	Ass't Surg.	" " " "
July 20, 1863	Alfred P. Zeigler	"	" " " "
Oct. 5, 1865	J. H. Finefrock	"	" " " "

TWELFTH REGIMENT O. V. C.

Oct. 15, 1863	George W. Brooke	Surgeon ..	Resigned July 18, 1865.
Aug. 15, 1865	W. K. Hughes	"	" " " "
Nov. 6, 1863	"	Ass't Surg.	Promoted Surgeon.
" " "	A. H. Hunt	"	Resigned to enter Regular Army.
Sept. 20, 1865	George W. Pease	"	" " " "

Roster of Surgeons and Assistant Surgeons—Continued.

THIRTEENTH REGIMENT O. V. C.

Date.	Name.	Rank.	Remarks.
—, 1864	William H. Park.....	Surgeon ..	Declined commission.
Oct. 19, 1864	N. S. Richardson.....	"	Mustered out with reg't August 10, 1865.
May —, 1864	R. C. Downey	Asst. Surg.	Resigned April, 1865.
May 2, 1865	W. J. Wilson	"	Mustered out with reg't August 10, 1865.
June —, 1865	H. W. Carpenter.....	"	Never mustered.

FIRST REGIMENT OHIO HEAVY ARTILLERY.

Sept. 8, 1862	J. L. Firestone.....	Surgeon ..	Mustered out with reg't July 25, 1865.
Aug. 12, 1863	E. L. Hard.....	Asst. Surg.	Resigned August 23, 1864.
Nov. 10, 1863	N B Lafferty.....	"	" June 9, 1865.
Jan. 4, 1865	Henry C. Beard.....	"	Mustered out with regiment July 25, 1865
Feb. 28, 1865	George A. E. Cary	"	" " " "

SECOND REGIMENT OHIO HEAVY ARTILLERY.

Aug. 11, 1863	Strickland Albright ..	Surgeon ..	Mustered out with regiment Aug. 25, '65.
Aug. 26, 1863	Frank E. Powers.....	Asst. Surg.	Promoted Surgeon 180th O. V. I.
Oct. 4, 1864	E. V. Kendig	"	Mustered out with regiment Aug. 25, '65.
Nov. 14, 1864	John Morgan.....	"	" " "
Aug. 26, 1863	R. A. Dwyer.....	"	Promoted Surgeon 178th O. V. I.

C.

LIST OF CONTRACT SURGEONS

From the State of Ohio, employed by Col. C. S. Tripler, U. S. A. Medical Director, Department of Ohio.

Name.	Residence.	Ordered to.
S. M. Richardson	Mastertown	Louisville, Ky.
D. M. Murray	Dayton	"
John K. Mock	Greenville	"
J. S. Wilson	Howland	"
J. C. Bowen	Toledo	"
Albert G. Brown	Coshocton	"
George W. Garrison	"	"
C. J. Hagan	Port Washington	"
J. C. McBeth	Galion	"
W. H. Curran	Cincinnati	"
Samuel L. Kennedy	Mansfield	"
Wm. A. Dixon	Ripley	"
Thomas C. Eakin	Columbus Grove	"
John Welch	Mt. Vernon	"
F. A. Tuttle	Plymouth	"
W. H. Curran	"	"
Wm. A. Flagg	"	"
S. F. Selby .....	..... e man	"
P. C. Allen	Croton	"
Wm. Fleming	Bellaire	"
Lucius M. Purple	Norwalk	"
Johnson Loffland	Chillicothe	"
Mathias Cook	Columbus	"
George C. Maxon	Shiloh	"
George B. Mills	Dumontsville	"
H. W. Carpenter	Lancaster	"
Wm. R. Berry	"	"
Sol B. Hiner	William's Course	"
Silas A. Hedges	"	"
Samuel Richards	"	"
H. H. Bishop	"	"
John T. Thrifts	"	"
Silas M. Leeds	"	"
W. C. Gander	"	"
E. W. Savage	"	"
W. P. Foster	Cincinnati	"
S. E. McKinley	"	"
J. W. Reed	"	"
David B. Adams	"	"
Solomon Steward	Mansfield	"
George H. Burrows	"	"
W. W. Fountain	"	"
Phil. C. Cole	"	"
Moses R. Gillmore	"	"
Sanford P. Cutler	"	"
Edward L. Page	"	"
W. W. M. Connel	"	"
Thornton F. White	Kilbourn	"
Wm. A. Johnson	Harrison	"
J. P. White	Cincinnati	"
Geo. W. Ramage	Summersville	"
Wm. Owens	Cincinnati	"
Thomas B. Harbison	Xenia	"
P. H. Loring	Kenton	"
O. P. Potts	Preble County	"
Solomon Critchfield	Sparta	"
Jacob C. Denise	Dayton	Columbus, O.
Charles E. Boyle	Columbus	"

List of Contract Surgeons—Continued.

Name.	Residence.	Ordered to.
D. Strickland.....	Howland.....	Columbus.
J. P. Bing.....	Pomeroy.....	"
J. Stoltz.....	Crestline.....	Crestline.
A. S. Stevens.....	Twenty Mile Stand.....	Camp Dennison.
Thomas B. Eagle.....	Landonville.....	Columbus.
James F. Brown.....	Windham.....	"
A. P. Esselborn.....	Cincinnati.....	"
C. McKenzie.....	Cleveland.....	Cleveland.
J. R. Kelch.....	Yellow Bud.....	Columbus.
A. G. Hart.....	Cleveland.....	Cleveland.
J. R. Gast.....	Circleville.....	Columbus.
K. Ray.....	".....	"
J. P. Paulling.....	Piqua.....	Camp Dennison.
J. H. Williams.....	Upper Sandusky.....	Camp Chase.
Robert Bartholow.....	Cincinnati.....	Cincinnati.
C. H. Smith.....	Columbus.....	Camp Dennison.
Lucian A. James.....	Cincinnati.....	Cincinnati.
A. J. Brockett.....	Bristol.....	Columbus.
J. P. Schilling.....	Stark County.....	"
D. Williams.....	Damascoville.....	Camp Dennison.
John M. Evans.....	Newark.....	Columbus.
J. C. Schenck.....	Cleveland.....	Cleveland.
George Cornell.....	Youngstown.....	Columbus.
Jacob Laisy.....	Cleveland.....	Cleveland.
Charles A. Perden.....	Greensburg.....	Columbus.
O. D. Norton.....	Cincinnati.....	Cincinnati.
E. B. Stevens.....	".....	"
J. B. Smith.....	".....	"
A. E. Heighway.....	".....	"
W. H. Drury.....	Columbus.....	Columbus.
John G. Coates.....	Cleveland.....	Camp Dennison.
C. S. Muscrops.....	Cincinnati.....	Cincinnati.
John M. Corey.....	Fremont.....	Columbus.
J. W. Smith.....	Cleveland.....	Cleveland.
Z. F. Guerin.....	New Albany.....	Columbus.
L. H. Angell.....	Cardington.....	"
G. S. Hutzger.....	Columbiana.....	"
S. S. Stanbaugh.....	Columbus.....	"
Henry Kuhn.....	Tiffin.....	Camp Dennison.
Jacob B. Casebeer.....	Fredericksburg.....	"
Isaac Bidell.....	Mt. Vernon.....	"
H. P. Hay.....	East Fairfield.....	"
Homer C. Shaw.....	Lancaster.....	"
J. H. White.....	Delaware.....	Camp Delaware.
Starling Loving.....	Columbus.....	Columbus.
D. A. Morse.....	Monroe.....	"
J. F. Wilson.....	New Holland.....	"
Charles Thornton.....	Cincinnati.....	Cincinnati.
F. W. Morrison.....	Delaware.....	Camp Dennison.
T. J. Pearce.....	Mechanicksburg.....	"
Wm. L. Peck.....	Circleville.....	"
J. C. Rathburn.....	Rodney.....	Gallipolis.
W. H. Phillips.....	Kenton.....	"
J. F. Armstrong.....	Cleveland.....	Cleveland.
A. T. C. Worthington.....	".....	Lima.
George W. Livesay.....	Gallipolis.....	Gallipolis.
L. B. Lathrop.....	Cleveland.....	"
D. L. Tidball.....	Cincinnati.....	Indianapolis, Ind.
J. M. Hiatt.....	Oxford.....	"
Wm. Watt.....	Kenton.....	Madison, Ind.
Orson Britton.....	Hamilton.....	"
George W. Garver.....	".....	Indianapolis, Ind.

List of Contract Surgeons.—Continued.

Name.	Residence.	Ordered to.
Jesse Miller	North Benton.....	Indianapolis, Ind.
James S. Fergusson	Oxford	Madison, Ind.
H. F. Bosworth.....	Bellefontaine	"
L. J. Moeller	Columbus	Indianapolis, Ind.
Geo. Gamble.....	Cincinnati	Madison, Ind.
J. S. Gard	Columbus	"
Moses R. Gilmore	Cincinnati	Louisville, Ky.
E. Julius Fink	"	Cairo, Ill.
R. P. Johnson	Dearfield	Springfield, Ill.
C. R. Langdon	Lancaster	Chicago, Ill.
S. F. Balingier	Putnam	Springfield, Ill.
Eben Smith	Lock	"
John Resley	Cardington	Chicago, Ill.
H. C. Newkirk	Big Prairie	Rock Island, Ill.
Thomas Sullivan.....	Cleveland	Madison, Ind.
David Lewis	Belle Vernon.....	Gallipolis, Ohio.
J. A. Manser	Marion	Springfield, Ill.
Jacob Hamp	Mt. Vernon	Cairo, Ill.
M. M. Stimmel	Kenton	Springfield, Ill.
Simon C. Chase.....	New Vienna	Mound City, Ill.
B. F. Thrall	Kirkersville	Springfield, Ill.
Wm. B. McGavren	Carrollton	Chicago, Ill.
John H. Goss.....	New Salem	"
R. S. Stansbury	Clarksville	Mound City, Ill.
Henry K. Hershiser.....	Columbus	Chicago, Ill.
Joshua R. Young.....	Sylvia	Rock Island, Ill.
H. H. Russell	Pomeroy	"
Wm. H. Swander	Union, Montgomery Co.....	Madison, Ill.
R. F. Jacobs.....	Yellow Springs	Chicago, Ill., (died.)
Samuel B. Wren	Mechanicsburg	"
Wm. P. Evans	Richmond	"
Jesse W. Cook.....	Selma, Clark Co	Jackson, Mich.
Andrew M. Cook.....	"	"
Wm. C. Catlin.....	Cleveland	Madison, Ind.

D.

*List of Ohio Surgeons and Assistant Surgeons Commissioned by the President
in the United States Volunteer Medical Staff.*

Rank.	Name.	Date of Appointment.	Remarks.
Surgeon U. S. Vols.	Charles O'Leary.....	Aug. 3, 1861	Brevetted Lieut.-Colonel.
"	John D. Robinson.....	Aug. 5, 1861	" "
"	William Clendenin.....	Aug. 5, 1861	" "
"	George G. Shumard.....		Resigned March 11, 1865.
"	F. N. Burke.....	Sept. 6, 1861	Brevetted Lieut.-Colonel.
"	D. W. Hartshorne.....	Sept. 6, 1861	Resigned January 8, 1864.
"	George C. Blackman.....	Sept. 18, 1861	Resigned July 30, 1862.
Medical Inspector.....	W. H. Mussey.....	June 14, 1862	Resigned January 1, 1864.
Surgeon U. S. Vols.	F. Seymour.....	Dec. 24, 1861	Dismissed February 19, 1864.
"	Norman Gay.....	Dec. 24, 1861	Brevetted Lieut.-Colonel.
"	Rufus H. Johnson.....	Dec. 24, 1861	Resigned January 24, 1863.
"	W. W. Holmes.....	April 4, 1862	Honorably discharged.
"	W. W. Nassan.....	April 4, 1862	Resigned January 23, 1863.
"	A. J. Phelps.....	April 4, 1862	Brevetted Lieut.-Colonel.
"	Clarke McDermont.....	April 14, 1862	" "
"	E. Y. Chase.....	May 27, 1863	" "
"	John M. Robinson.....	Sept. 11, 1862	Mustered out July 31, 1865.
"	Francis Salter.....	Sept. 11, 1862	Brevetted Lieut.-Colonel.
"	H. Culbertson.....	Nov. 7, 1862	" "
"	G. R. Week.....	Feb. 19, 1863	" "
"	S. D. Turney.....	Feb. 19, 1863	" "
"	Edwin Freeman.....	Nov. 7, 1862	Resigned April 14, 1864.
"	A. C. Swartzwelder.....	July 19, 1863	Still in service.
"	E. Pearce.....	Sept. 9, 1863	Honorably discharged.
"	R. Fletcher.....	Oct. 13, 1863	Brevetted Colonel.
"	Jacob Y. Cantwell.....	April 6, 1864	" Lieut.-Colonel.
"	Thomas B. Hood.....	April 6, 1864	" "
"	H. Z. Gill.....	April 6, 1864	" "
"	W. C. Daniels.....	Sept. 9, 1863	" "
"	Charles H. Hood.....	Nov. 7, 1863	" "
"	M. C. Woodworth.....	April 5, 1864	Resigned April 5, 1865.
"	A. McMahon.....	May 24, 1864	Brevetted Lieut.-Colonel.
"	J. S. McGrew.....	July 26, 1864	" "
"	J. W. Applegate.....	Feb. 19, 1863	Still in service.
"	Samuel Hart.....	Mar. 11, 1863	Brevetted Lieut.-Colonel.
Asst. Surg. U. S. Vols.	M. K. Moxley.....	Feb. 19, 1863	" Major.
"	G. S. Courtright.....	Aug. 15, 1863	" "
"	Gerhard Saal.....	Sept. 9, 1863	" Captain.
"	H. M. Kirke.....	Nov. 7, 1863	" Major.
"	John McCurdy.....	Jan. 8, 1864	Resigned February 13, 1865.
"	Samuel Kitchen.....	Jan. 8, 1864	Brevetted Captain.
"	J. Sykes Ely.....	April 20, 1864	" "
"	John H. Frizelle.....	May 13, 1865	Mustered out Aug. 15, 1865.
"	Byron Stanton.....	Feb. 9, 1865	Brevetted Major.
"	Park H. Loring.....	Feb. 9, 1865	Died.
"	D. Williams.....	Feb. 9, 1865	Brevetted Major.

E.

*List of Gentlemen who constituted the "State Board of Medical Examiners"
for the Army during the Rebellion.*

Name.	Residence.
George C. Blackman, M. D.....	Cincinnati.
J. W. Hamilton, M. D.....	Columbus.
L. M. Whiting, M. D.....	Canton.
S. M. Smith, M. D.....	Columbus.
W. W. Awl, M. D.....	Columbus.
John W. Russell, M. D.....	Mount Vernon.
John A. Murphy, M. D.....	Cincinnati.
A. H. Woodbridge, M. D.....	
C. C. Cooke, M. D.....	Youngstown.
Gustave C. E. Weber, M. D.....	Cleveland.

DEATHS OF MEDICAL OFFICERS DURING THE REBELLION.

Rank.	Name.	Regiment.	Date.	Remarks.
Surgeon ...	R. R. McMeans	3d O. V. I.	Oct. 30, 1862	Disease con. in service.
"	H. H. McAbee	4th "	Sept. —, 1864	Killed by R. R. accid't.
Ass't Surg..	James Davenport....	9th "	Mar. 29, 1863	Disease con. in service.
Surgeon ...	W. W. Holmes	12th "	April 28, 1862	Died of consumption.
"	Henry Spellman	15th "	.....	" at Evansville, Ind.
Ass't Surg..	John G. Purple	20th "	May 13, 1862	Disease con. in service.
"	William Y. Dean	25th "	Sept. 17, 1862	" " "
"	G. S. Guthrie	32d "	Feb. 20, 1864	Died at Chattanooga.
"	John A. Soliday	32d "	Mar. 26, 1865	" Goldsboro, N. C.
Surgeon ...	Francis D. Morris....	35th "	Sept. 23, 1864	" Hamilton, O.
"	John N. Miner	42d "	Dec. 13, 1862	
Surgeon ...	W. W. Bridge	46th "	Aug. 6, 1864	Died at Marietta, Ga.
Ass't Surg..	Greenleaf C. Norton..	46th "	Aug. 10, 1862	
"	J. K. Lewis	48th "	Oct. 11, 1862	
"	A. J. Rosa	52d "	Feb. 20, 1864	Died at Lookout Mt.
"	N. H. Fisher	56th "	Jan. 25, 1862	
Surgeon ...	John P. Haggett	57th "	April 30, 1862	
"	William D. Carlin	57th "	Dec. 26, 1862	Died at Memphis, Tenn.
Ass't Surg..	Bruno Laukriet	58th "	Oct. 27, 1862	
"	William S. Moore	61st "	July 3, 1863	Killed at Gettysburg.
"	Moses B. Haines	69th "	.....
"	E. W. Steele	74th "	.....
Surgeon ...	Charles R. Pierce	76th "	Jan. 29, 1863	Died at Vicksb'g, Miss.
Ass't Surg..	Robert P. Muenschor..	76th "	Oct. 2, 1862	
"	Pardon Cook	77th "	Sept. 23, 1863	
Surgeon ...	L. C. Brown	85th "	Nov. —, 1862	
"	A. Longwell	88th "	Mar. 18, 1865	Died at Camp Chase, O.
"	Alfred Taylor	89th "	May 23, 1863	Drowned in Ohio river.
"	F. W. Marseilles	98th "	May 1, 1864	Died at Chattanooga.
Ass't Surg..	G. W. Sayres	102d "	Sept. —, 1864	" at home.
"	F. M. Andrews	103d "	Oct. 9, 1864	" at Atlanta.
Surgeon ...	Charles A. Hartman..	107th "	May 9, 1863	Kill'd bat. Fred'ksburg
Ass't Surg..	D. H. Silver	111th "	June 27, 1864	D'd at Knoxville, Tenn.
Surgeon ...	A. R. Gilkey	116th "	June 4, 1863	D'd at Winchester, Va.
"	Thomas J. Shannon	116th "	Oct. 19, 1864	Killed in battle.
Ass't Surg..	R. H. Tullius	7th O. V. C.	Sept. —, 1864	Died at Ripley, O.
Surgeon ...	James W. Thompson..	10th "	Nov. 25, 1864	" at home.
Ass't Surg..	Martin Doty	174th O. V. I.	Dec. 10, 1864	[Columbus, O.
"	Samuel Mathers	53d "	May 23, 1865	Died Seminary Hosp.,
Surgeon ...	William F. Brown	136th O. N. G.	June —, 1864	
Ass't Surg..	Z. Northway	6th O. V. C.	Nov. 10, 1864	Died at home.
"	J. H. Biteman	19th O. V. I.	Sept. 25, 1865	" in Texas.

